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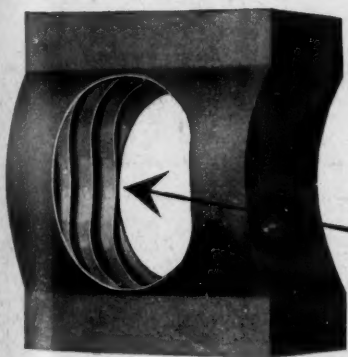
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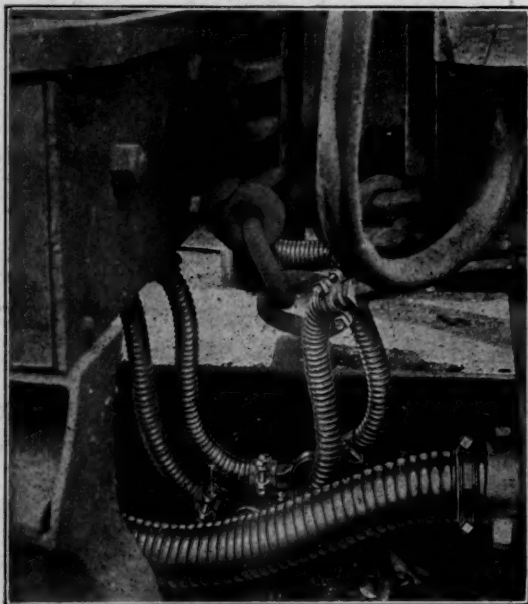
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Railway Age Gazette

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The latest indictment against government ownership of railroads comes to us from one of our readers in China. An editorial exposé of a contract recently closed by the Chinese minister of communications for the rental of 200 freight cars at approximately \$4 per car per day for a period of 15 years, appeared in the Peking Gazette of March 22. This is reproduced in part elsewhere in this issue of the *Railway Age Gazette*. Our Peking friend states that the minister of communications received \$500,000 as his personal consideration for closing the car contract. The line for which the cars were rented is part of the through railroad from Peking to Shanghai. The road was built jointly by German and British capital, the Germans having the northern section. It does not pay interest charges owing to the fact that the Chinese military governor of the province uses the freight service of the line as he sees fit and sells passes. In 1919 refund of the mortgage on the line begins, in default of which the bondholders will foreclose. If the Japanese succeed to all German interests in China, a mere glance at the map will show how Nipponese control will be extended almost to the Yangste river, cutting off Peking from coast communication. It is, therefore, evident that those who control the government owned lines of China pursue their own selfish ends even at the possible cost of their country's integrity.

One thought that should be kept in mind continuously when railroad men are seeking ways of helping the country in the war is that it is not saving in dollars and cents, which is the first consideration, but rather a fuller utilization of facilities for the specific purposes of the government. In this connection the railroad managements, through their committees in Washington, are making plans to discourage conventions and unnecessary heavy movements of passenger business. The passenger traffic departments of many railroads are users of a considerable amount of local daily newspaper advertising space and national advertising. If passenger traffic is to be discouraged rather than stimulated this advertising space could be used better in some other way than it is now being used. Could it not profitably be used to urge heavier car-

loading by shippers? The consensus of opinion from inquiries which the *Railway Age Gazette* has made appears to be that the most obviously effective way of getting better carloading is by personal solicitation of shippers, but this does not mean that other methods cannot be used supplementary to personal solicitation which will yield a large return on their cost. A shipper who has noticed and possibly read an advertisement in his daily newspaper urging heavier carloading and who has read an advertisement along similar lines in his weekly or monthly magazine will be a great deal more ready to see the point of view of the representative of the railroad who calls on him to urge heavier carloading than would the shipper who has not seen the advertisements. This fact that advertising is of immense value in supplementing personal solicitation has been demonstrated over and over again. When people begin to talk safety first, for instance, they begin to practice it. If the railroads can get the public to talking heavier carloading the shippers will practice it. By using advertising space which is already planned for (by the passenger traffic department) to urge heavier freight car loading the railroads can get the public to talk and think heavier carloading.

Secretary of Commerce Redfield, in an address before the National Association of Manufacturers in New York on May 16, emphasized the necessity of producing foodstuffs and of eliminating waste. He declared that every employer controlling land which could be made available for raising food should encourage and assist its cultivation by employees and later in his address said, "There is no industrial duty more pressing at this hour than that of stopping family and factory waste." The railway officers who read this will feel a particular pride in that they were among the first to grant idle land to their employees for cultivation. It will interest Mr. Redfield and the other members of the official family at Washington to know also that the railways of the country have already taken to heart that part of his message concerning the elimination of waste and that to a certain extent they have anticipated his suggestion. Take for example, the matter of loss and damage to freight. The railways for many years have been striving to cut down

Advertise Heavier Carloading

The Elimination of Waste

the loss and damage claims, and with a fair degree of success, but the general manager of the Missouri Pacific has struck the right chord when, in a memorandum to all officers and employees, he says that "it is our patriotic duty to serve our country by carefully handling all freight that is committed to our care for transportation." "The food supply of the nation," the notice says, "is committed to the care of the railroads for transportation, and each employee should bear in mind that he can perform no duty more patriotic at the present time than to make every effort to see that the shipments, in the transportation of which he has a hand, are handled without loss or damage. Every sack of flour that is damaged by rough handling or improper preparation of the car, every bushel of wheat that is lost by defective equipment, every shipment of perishable goods that is spoiled by delay, improper refrigeration or ventilation, every animal that is killed on the right-of-way, and every pound of shrinkage caused by stock being delayed or injured by rough handling, hampers our country in its effort to conserve its resources during this international conflict." Then take the matter of the waste of company material. "Do your part to make the Seaboard the cleanest railroad in the South," says a recent Seaboard Air Line store department bulletin. "Material and labor not in use are absolute wastes. Cleanliness and order are the basis for system. Cleanliness is economy." The bulletin emphasizes the rapidly increasing costs of materials. It calls upon the operating officers to watch requisitions and to stop all those not absolutely necessary "at their source." It tells master mechanics, to make the article they already have answer, if possible, for the purpose and calls upon them to see that drills, tools and steel are not in the lockers but the tool room. "Investigate your shop cupboards weekly. The shops and line must be kept clean of scrap and surplus material. Save your material now, as never before." To clinch the argument the bulletin gives the supply train schedule for the entire month and lists the cleanest agencies, roadmasters' districts and the cleanest toolhouses on each division. And so we might go on. One point is that these and ideas like them are worthy of imitation. The other is that the railways are on the job.

RECORD BREAKING CAR SHORTAGE AND THE WAR

THE car shortage reported on May 1 again broke all previous records. Its seriousness is sufficiently great, but not so much for what it means in the present as because of the indication it affords as to what probably is coming. A deficiency of 145,449 cars, or approximately six per cent of the total freight car equipment, would be bad enough at any time. The largest shortage previous to that of April and May of this year, of 137,847 cars in February, 1907, occasioned alarm among all commercial and railway interests. But conditions then were entirely different. A shortage so large this year and at this time of the year indicates a tendency which if not overcome, will lead to a condition not comparable to any that ever previously existed.

Here are the facts as shown by the net shortages reported by the American Railway Association for the early months of 1907 and for corresponding months of 1917:

NET SHORTAGE OF FREIGHT CARS

1907	Cars	1917	Cars
January 2	85,493	January 1	62,247
February 6	137,847	February 1	109,770
April 10	81,117	March 1	130,882
May 15	33,991	April 1	144,797
June 12	8,018	May 1	145,449
June 26	1,599		

The above statistics indicate in a simple but startling way

the difference between the conditions in 1907 and 1917. These are the only two periods since car shortage figures have been compiled when a car shortage of any size or duration has occurred in the spring. It is true that there was a small shortage in March, 1916, but it was due wholly to a sudden and temporary congestion at eastern ports and was not indicative of a general condition. Though the shortage in 1907 was considered very serious, it steadily decreased from February, entirely disappeared in June, and on July 10 there were over 37,000 idle cars. This year for the first time the railways have the prospect of going through the spring, summer and fall with no surplus cars whatever.

Shippers and railways are confronted with an unprecedented situation. Commercial business has been sufficient to produce and maintain a shortage through the months during which ordinarily there is large surplus. But it is only a matter of a few months until the government will require the railroads to move a minimum of 500,000 men with their equipment. Caring for these men in the concentration camps means the building and supplying of the equipment of ten cities having an unproductive population averaging 50,000 each. The railways will be called upon to transport all the material for the erection of these cities, for the construction of water supply, sewerage systems, lighting systems, etc., and supplies for the maintenance of their population. Moving this number of men is but a small part of the demand that will be made upon our transportation system by the war. This extraordinary demand will come at the period when regular traffic is ordinarily the heaviest, and there is every indication that commercial transportation demands will increase rather than diminish.

There is little of value in calling attention to a situation of this kind unless some attempt is made to point out measures for the alleviation of the difficult conditions. The need of more equipment can be supplied only in a small measure this summer and fall. Builders are overwhelmed with foreign as well as domestic orders. There is a shortage of labor. It is plain, then, that the railways and the shipping public must secure relief mainly, if at all, by getting the utmost available out of every item of equipment and of facilities now existing. Comprehensive measures to this end are already being undertaken by competent hands. Shippers must co-operate with the railways, first, by assisting to move every possible item of traffic during the summer months when normal necessary traffic ordinarily is lightest; and second, by assisting in the utilization of every facility in the most effective manner. This means foregoing some of the rights recognized as established under normal conditions of transportation service, for the present condition is not a normal one, and it means that every car ought to be loaded to its rated capacity where this is physically practicable and that the 10 per cent average overload allowed should be used wherever possible. Regulating bodies have imposed upon the railroads obligations of special importance. The least they can do is to throw no hindrances in the way of the railways while endeavoring to perform their part. They can assist in various ways by relieving the onerousness of restrictions which they may, perhaps, be able to justify at other times. Any other course than that which will tend to relieve the present unprecedented condition by helping the railways to carry their present burden and strengthening them for the bearing of the greatest burden soon to be thrust upon them must be recognized as a detriment to the welfare of the country.

Finally, every citizen must act in a spirit of co-operation with the interest of what has been named the third arm of the nation's defensive service. It is no time for complaint of service for deficiencies that might reasonably be objected to under normal conditions. The nation is at war. Every citizen is vitally interested in the war's successful outcome. The railways are on the first line of defense.

TERMINATION OF A MOST INTERESTING RECEIVERSHIP

JUDGE CARPENTER in the federal court, has terminated the Chicago, Rock Island & Pacific receivership without foreclosure. This receivership of the old Chicago, Rock Island & Pacific Railway Company, which owns and operates about 8,000 miles of railroad, has been a series of incidents of dramatic interest. The company had been controlled through an elaborate double holding company scheme which collapsed. D. G. Reid, W. H. Moore and James H. Moore had controlled the holding companies, but had sold a large block of holding company stock in previous years, first to the Pearson-Fahrquar syndicate, which had tried to get control of a transcontinental line by piecing together the Lehigh Valley and some middle western road with the Chicago, Rock Island & Pacific, and later to Cleveland H. Dodge, A. C. James and other interests in Phelps, Dodge & Co. when the Pearson-Farquhar syndicate turned out to be a bubble. In time it became evident that the real control of the owning and operating company would be with the holders of the Chicago, Rock Island & Pacific Railroad Company—the undermost of the two holding companies—collateral bonds under which was deposited the approximately \$75,000,000 stock of the Chicago, Rock Island & Pacific Railway Company, the owning and operating company.

The two holding companies went into receivership; the railway company stock deposited under the debenture bonds was sold, but the holders of these bonds had the privilege of buying in the railway company stock pro rata to their holdings of bonds; in other words, the expected happened and the holders of the bonds became the stockholders and therefore the controlling interest in the railway company. But control was not apparently held by any one group of interests. Trust company and insurance company presidents were chiefly concerned in protecting the interests of the underlying bonds which were held by real investors and by insurance companies; a new faction had made its way into Rock Island affairs led by N. L. Amster, a Boston man; Samuel Untermeyer, of New York, and Jacob Newman, a Chicago lawyer. Apparently while no large banking interest would come forward and finance the needs of the company to help it meet its maturing notes, nobody wanted anybody else to do anything, and on what looked like a snap judgment, the Moores and D. G. Reid threw the Chicago, Rock Island & Pacific Railway Company into the hands of receivers.

The receivership was bitterly contested by Mr. Amster and his following. The trust company and insurance company interests were for playing safe and selling the road under foreclosure under some plan of reorganization which would protect the underlying bondholders' interests fully; Mr. Amster was unable to get strong banking support but fought on with all the resources at his command and with such advantage as publicity and a distrust of the Reid-Moore syndicate gave him; the Reid-Moore syndicate was apparently either unwilling or unable to find the banking support to reorganize the company with affairs in the state that they were in, and then in the midst of this muddle came a very large increase in business. The old Chicago, Rock Island & Pacific Railway operating organization had been miserably handicapped by a control which was a thousand miles away and by bankers and speculators who were most successful financiers, but neither had time nor inclination for any extended study of the economics of railway operation. Perhaps because of these very handicaps the management had potentially a fine organization. Released from this handicap, with the freedom and good will which Judge Dickinson gave them as receiver, the Rock Island management fairly sprang forward to take advantage of the large increase in business.

Numerous theories were advanced at the time of the Rock Island receivership, or just prior to it, as to "what was the matter with the Rock Island." One point of agreement,—and it was about the only point on which there was any general agreement—was that one thing the Rock Island lacked was business. This peculiar combination of circumstances—a large increase in business and a freedom to make the expenditures for rehabilitation and to operate regardless of financial showing—gave the Rock Island management the chance that it needed; likewise, it apparently played directly into Mr. Amster's hands. Mr. Amster was made chairman of the board of directors. Under Judge Dickinson's administration the road was rehabilitated out of the current funds; the earnings showing was so good that the most strenuous opposition of insurance companies and trust companies to a reorganization without foreclosure was overcome; and finally through agreements and compromises a plan was adopted under which \$65,000,000 of new preferred stock is to be issued, \$55,000,000 of it immediately; and of this \$55,000,000, \$30,000,000 will be 7 per cent preferred and \$25,000,000 6 per cent preferred. Of the \$30,000,000 cash raised by this plan, \$17,180,000 will be used to pay receiver's certificates and \$12,500,000 to pay in cash other matured securities.

The question as to who has final control of the company now is still one which cannot be definitely answered.

INEFFICIENT REGULATION

THE Illinois passenger rate case has been brought to a head by the recent action of the Superior Court at Chicago, granting the attorney general of Illinois an injunction to prevent the railroads from raising state fares to 2.4 cents and a later decree by the United States District Court at St. Louis which threatens to cite the Illinois authorities for contempt if they prosecute the railroads for putting the higher rate into effect.

The legal tangle which has developed from the case of the Business Men's League of St. Louis vs. the Atchison, Topeka & Santa Fe Railway Company et al. forcefully illustrates the antiquated and inadequate scheme of regulation the railroads are forced to submit to. The carriers have been required to run back and forth between the state and interstate commissions like a bewildered office boy trying to carry out the conflicting orders of employers with equal authority. At a time when the American public and the state and federal governments are watching the carriers so closely for inefficiency in operation or financing, they impose upon the railways a ridiculously inefficient and exceedingly expensive system of regulation.

In brief, the history of the Illinois case is as follows: In 1907, the Illinois legislature passed a 2 cent fare law. The Interstate Commerce Commission, after a thorough investigation, declared 2.4 cents a mile a reasonable passenger fare for interstate travel. Citizens of St. Louis, Mo., and Keokuk, Iowa, complained of discrimination against them on the grounds that they were charged 2.4 cents a mile for passenger travel to points in Illinois while business competitors just across the river traveled for 2 cents. After investigation the Interstate Commerce Commission ordered the carriers to remove that discrimination. The railroads filed tariffs raising the passenger fare in Illinois to 2.4 cents. The United States District Court at Chicago declined to restrain Illinois authorities from prosecuting the railroads for charging more than the state statute permitted, following which the railroads appealed to the United States Supreme Court. The Supreme Court on the appeal refused to grant the roads a temporary injunction and is now considering their application for a permanent injunction.

The Interstate Commerce Commission obtained an injunction in the United States District Court at St. Louis requiring

the railroads to remove discrimination against St. Louis and Keokuk not later than May 30. The Superior Court at Chicago granted the attorney general of Illinois an injunction restraining the railroads from charging higher rates. The Wabash, the Louisville & Nashville and the Mobile & Ohio disregarded the restraining order and put the 2.4 cents fare into effect on May 30. On June 8, the United States District Court at St. Louis issued a decree ordering the railroads to comply with the orders of the Interstate Commerce Commission and promising to cite the Illinois authorities for contempt if they interfered. All other railroads concerned made the 2.4 cent rate effective on June 9, 10 and 11. On June 11, the governor and attorney general of Illinois jointly appealed to the United States Attorney General to cause the Interstate Commerce Commission to seek a nullification of the order of the United States District Court at St. Louis on June 8.

It would seem that the possibilities for further prolongation of this see-saw between federal and state authorities have been exhausted, but whether such an optimistic view is justified under a system of railway regulation which requires obedience to 49 masters is doubtful.

LEHIGH VALLEY

It is rather surprising to see how well the Lehigh Valley was able to continue its program of additions and betterments, involving as well heavy maintenance expenses, in the six months ended December 31, 1916. In the previous fiscal year the Lehigh Valley had done the largest business

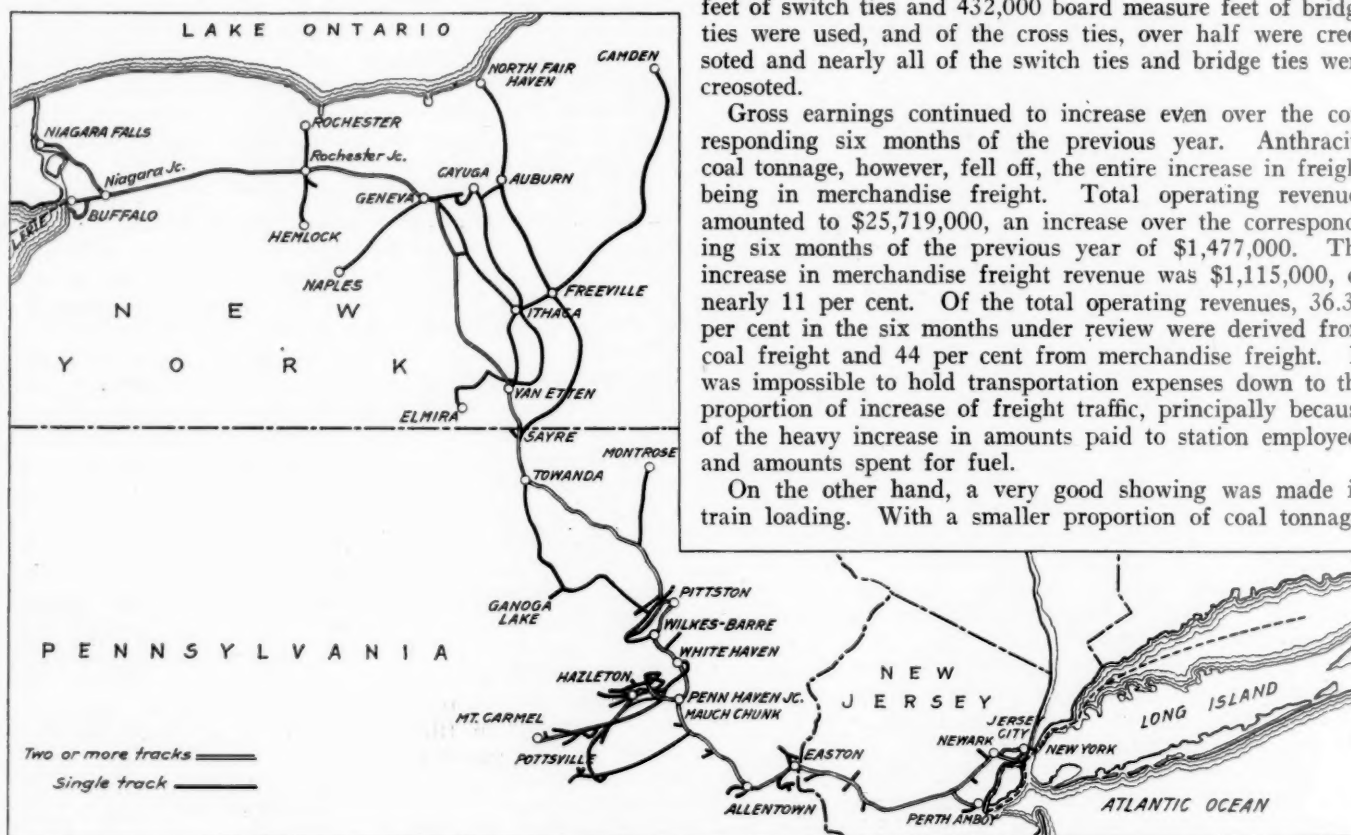
difficulties of getting deliveries, the Lehigh Valley managed to continue its betterment program in the six months July 1, 1916, to December 31, 1916.

A total of \$5,705,000 was spent during these six months on property account. This included equipment purchases; the rebuilding of five 10-wheel freight locomotives and equipping them with superheaters; the completion of the ore dock at Constable Hook, N. J.; the completion of a 30-stall fire-proof engine house, with a 100-ft. electrically operated turntable, at Manchester, N. Y.; and the strengthening of 42 bridges between Coxton, Pa., and Manchester. The amount of new equipment which the Lehigh Valley bought and actually received during these six months is impressive. It includes 23 freight locomotives, 1,317 80-ton capacity automobile cars with steel underframes and steel ends, and 3 locomotive cranes. In addition to locomotives and rolling stock 37 gasoline motor cars were bought for use of section and bridge gangs. The Lehigh Valley has now completed replacing all automatic disk signals on its lines with semaphore signals and during the six months ended December 31, 1916, 50 miles of two-position lower quadrant type signals were replaced with three-position upper quadrant signals equipped with electric lights.

The extensive additions and betterments necessitated extraordinary charges to maintenance of way and structures and also to maintenance of equipment. Of the 42 bridges mentioned which were strengthened, all of which were either light iron or wooden bridges, 27 were converted into steel bridges and 15 into concrete-steel bridges. In maintenance work 468,000 cross ties, 865,000 board measure feet of switch ties and 432,000 board measure feet of bridge ties were used, and of the cross ties, over half were creosoted and nearly all of the switch ties and bridge ties were creosoted.

Gross earnings continued to increase even over the corresponding six months of the previous year. Anthracite coal tonnage, however, fell off, the entire increase in freight being in merchandise freight. Total operating revenues amounted to \$25,719,000, an increase over the corresponding six months of the previous year of \$1,477,000. The increase in merchandise freight revenue was \$1,115,000, or nearly 11 per cent. Of the total operating revenues, 36.34 per cent in the six months under review were derived from coal freight and 44 per cent from merchandise freight. It was impossible to hold transportation expenses down to the proportion of increase of freight traffic, principally because of the heavy increase in amounts paid to station employees and amounts spent for fuel.

On the other hand, a very good showing was made in train loading. With a smaller proportion of coal tonnage,



The Lehigh Valley

in its history. An extensive program of additions and betterments had been undertaken and a new and higher standard of maintenance had been adopted. In April, 1916, \$10,697,000 4½ per cent bonds were sold, large purchases of equipment were made, and large expenditures for betterments to equipment were also made. Notwithstanding the scarcity of labor, the high price of materials and the

the average revenue trainload in the six months ended December 31, 1916, was 684 tons as against 653 tons, the average for the corresponding six months of 1915. This is an increase of 31 tons and is certainly a creditable showing. It was helped presumably by the fact that with the increase in merchandise tonnage it was possible to eliminate a very considerable amount of empty car mileage. The

loaded car mileage totaled 122,258,000 in the six months for 1916 and 121,525,000 in the corresponding six months of 1915, and the empty freight car mileage totaled 50,307,000 in the 1916 six months and 56,091,000 in the corresponding six months of 1915.

After charging out the 5 per cent dividends declared during the half year (the Lehigh Valley annual dividend rate is 10 per cent) the company had approximately a million dollars surplus. No new securities were sold, \$1,500,000 maturing equipment trusts and collateral bonds were retired, and, as before mentioned, \$5,705,000 was spent for addition and betterments. The company had on hand at the beginning of the six months' period \$15,127,000 cash, and no loans and bills payable. On December 31, 1916, there was \$11,423,000 cash, and no loans and bills payable.

The following table shows the principal figures for operation for the last six months of the calendar year 1916 compared with the corresponding six months of 1915:

	1916	1915
Mileage operated	1,443	1,443
Coal freight revenue.....	\$9,345,640	\$9,825,860
Merchandise freight revenue.....	11,317,769	10,202,599
Passenger revenue	2,599,694	2,301,665
Total operating revenues.....	25,718,557	24,241,217
Maintenance of way and structures.....	2,995,695	2,686,347
Maintenance of equipment.....	4,588,733	4,834,547
Traffic expenses	519,697	506,885
Transportation expenses	9,780,221	8,275,636
General expenses	529,853	438,786
Total operating expenses.....	18,414,199	16,742,200
Taxes	945,961	845,685
Operating income	6,358,396	6,653,332
Gross income	7,718,958	7,383,678
Net income	4,002,645	3,841,313
Dividends	3,030,400	3,030,400
Surplus	972,245	810,913

NEW BOOKS

Municipal Ownership Fails In U. S. A. By James B. Woodan. 32 pages. 6 in. by 9 in. Bound in paper. Published by H. J. Gonden, Peoples Gas Building, Chicago. Price, 25 cents.

This booklet contains the records of more than 200 municipal ownership failures. The public utilities concerned include electric light and power and gas and natural gas plants, water systems and electric railways. On the basis of his investigation the writer concludes that politics is the inevitable cause of these failures. The author states that municipal ownership popularizes itself by making its consumption rate so low that after paying the cost of operation the plant is unable to meet all or part of its fixed charges. It therefore produces an actual loss which the taxpayer makes up.

The Law of Interstate Commerce and Its Federal Regulation. (Third edition). By Frederick N. Judson, member of St. Louis (Mo.) bar. 1,066 pages, 6 in. by 9½ in. Bound in cloth. Published by T. H. Flood & Co., Chicago. Price \$7.50.

A third edition of this treatise on interstate commerce was prepared to bring it up to date. Since the last edition important amendments have been made to the Act to Regulate Commerce, the supplemental anti-trust legislation of 1914 has been enacted, and the Supreme Court of the United States has made certain constructions and applications of the law, in some instances overruling the district courts and the United States courts of appeal, or unifying the law where heretofore there had been conflicting opinions.

The book is not only a compendium of final holdings of the tribunals of last resort interpreting and applying the statutes, but includes such adjudications of the lower federal courts and of the state courts as serve to make for a comprehensive exposition of the existing law and to illustrate its historic development. Part I of the volume deals with the law of interstate commerce as declared by the courts. The remainder is devoted to legislation and its application to the regulation of interstate traffic. A discussion of the anti-trust relating to the concurrent powers of the state and federal gov-acts of 1890 and 1914 and their enforcement, and of questions ernments in interstate commerce is included in the treatise.

Letters to the Editor

ROAD BUILDING SHOULD BE ENCOURAGED

CHICAGO.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

We note the editorial in your issue of May 11 entitled, "Go Slow With the Road Building." It is recognized that government needs come first and that no private interest should interfere with the government's operations. It is also recognized that there has been a scarcity of labor, but it appears that the action already taken by the Special Committee on National Defense of the American Railway Association has so nearly shut off the supply of sand, stone, brick, etc., as to practically bring building of all kinds to a standstill in certain parts of the country. We are informed that still further action by this committee is contemplated looking to further curtailment of building operations. If this action is taken and the building industry is prostrated there will, in all probability, soon be not only a surplus of unemployed labor but also a surplus of cars. There may be also danger of a serious financial disturbance which may assume the proportions of a panic.

The government is considering a revenue bill to raise close to \$2,000,000,000 per year. It is also engaged in floating a \$2,000,000,000 loan. It seems to us that under these conditions great care should be exercised not to take action which will so seriously disturb industry as to embarrass the government in connection with the revenue bill and the bond issue.

There is need of elimination of waste, reduction of consumption, and increase of production. Material and labor which enter into buildings, roads, etc., are not consumed in the same sense that labor and material are which enter into numerous commodities and luxuries which, after being used, cease to exist or exist for no useful purpose. Most buildings and practically all roads represent labor and material which are not consumed but converted or changed in form, and which in the new form contribute continually, and in many cases indefinitely, to the benefit of the community.

Road building, particularly, it seems to us, should be encouraged rather than discouraged at this time. The inadequacy of transportation facilities is one of the most, if not the most serious difficulty under which we are now laboring. Roads supplement the transportation facilities of the railroads, relieving them to some extent of unprofitable short haul business which congests the terminals, and enable food and other products to be delivered to railroad stations irrespective of weather conditions.

B. F. AFFLECK,
President, Portland Cement Association.

CONDITIONS IN MEXICO.—Advices by mail we have just received from Mexico, report that the Mexican Government has recently seized all the English railway interests, the Mexican Railway, the Vera Cruz Terminal, the Alvarado Railway and the Tehuantepec National. The government also has seized all the funds belonging to Banco de Londres and the Banco Nacional. The appearance is that the government is fomenting discontent between employer and employees and encouraging unreasonable labor demands. Banditry is in full swing. The station at La Barca was burnt recently. It is said the troops sent after the bandits often steal more than the bandits. They seize innocent and harmless people and hang them just to show something for their expedition. After the years of destruction in Mexico one can obtain cars for shipments only by bribing the officials. —Wall Street Journal.



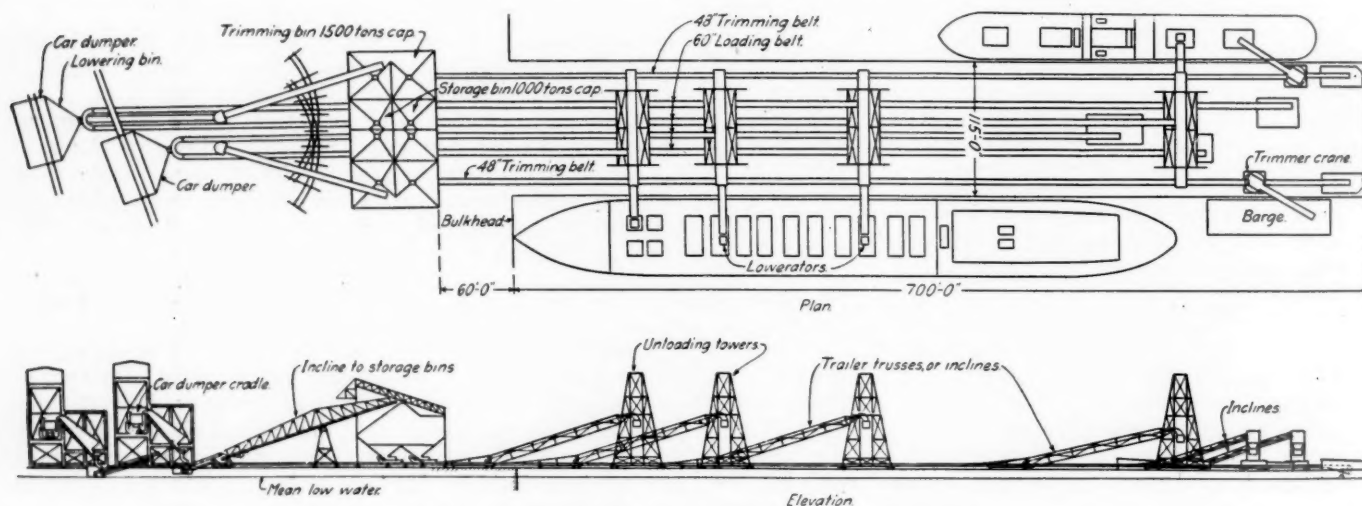
A View of the Pier and Power Station.

A Departure in the Design of Export Coal Piers

The Baltimore & Ohio Has Completed New Facilities at Baltimore in Which Many Novel Features Are Embodied

THE largest export coal pier in the world was recently placed in service by the Baltimore & Ohio at Curtis Bay, in the Baltimore, Md., harbor. It has a capacity of 12,000,000 tons per year, was built at a cost of more than \$2,500,000, and represents an entirely new departure in the design of such facilities. It was designed especially to overcome breakage while at the same time materially increasing the speed at which vessels may be loaded. With its system of car unloaders, belts and loading

of revenue freight, of which 32,269,568 tons was coal and 3,891,000 was coke. About 2,500,000 tons of this coal and coke was handled over the pier at Baltimore. During that year the maximum coal handling capacity of the old trestle was reached, making it necessary to provide new facilities to care for future increases. After a study of the different types of piers along the Atlantic seaboard and abroad, it was decided to build a plant to handle the coal by mechanical means rather than by gravity.



Plan and Elevation of the Pier and Car Dumper

towers it is possible to load four vessels with cargo coal and bunker fuel at one time. This dock replaces a wooden trestle pier with drop chutes that had been in operation for several years in the Curtis Bay terminal.

The Baltimore & Ohio lines reach the coal fields of Maryland, Pennsylvania, West Virginia, Ohio, Indiana, Illinois and Kentucky. In 1914, the railroad moved 69,382,000 tons

In addition to the coal handling apparatus, the plan provides for the utilization of the storage yard which served the old layout, the building of a new hump yard for loaded cars, a thawing house, a power plant and a sub-station and the dredging of a channel to provide a 35-ft. draft to the site of the pier, and slips of the same draft at either side of the pier.



The coal handling plant consists of two car dumpers located at the land end of the reinforced concrete pier, reinforced concrete balancing or storage hoppers located between the dumpers and the pier, and four loading and two trimming towers built of structural steel. The pier is in two units, a car dumper, two loading towers and a trimming tower comprising a unit. The car dumpers and the Barneyes that deliver the cars to them are steam operated. Beyond the car dumpers the operation is all electrical.

The car dumpers were furnished by the McMyler Interstate Company, Cleveland, Ohio. They handle cars up to 54 ft. in length and are guaranteed to handle fifty 50-ton cars or forty 100-ton cars per hour. In actual operation a cycle is performed in 49 seconds.

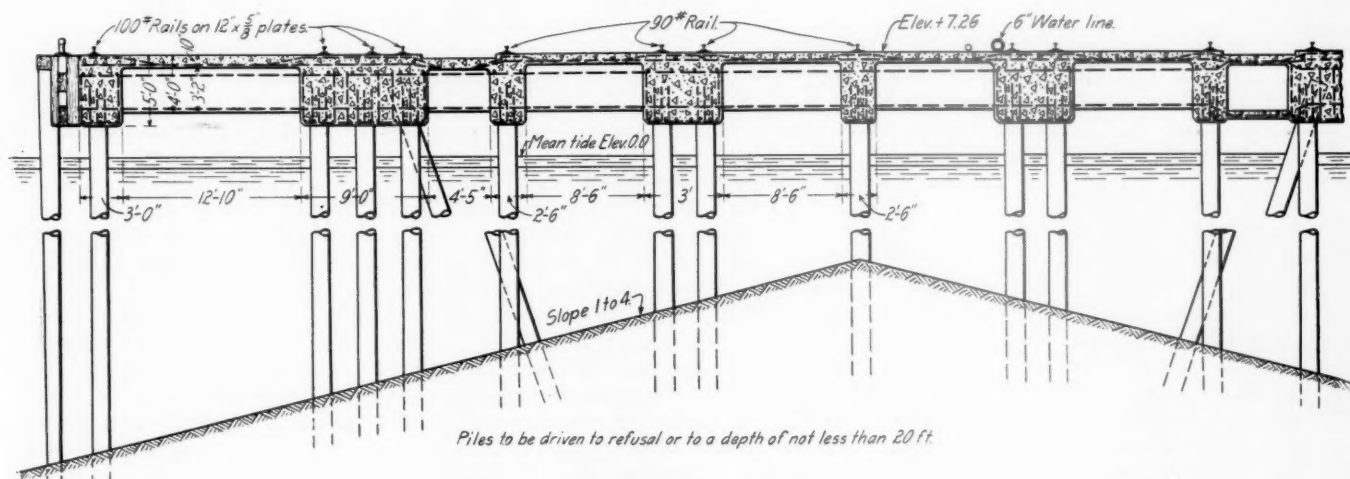
In operation the loaded cars drop down from the loaded yard to the Barney pit by gravity. The Barney is of the disappearing type and runs on a track placed between the rails of the standard gage track. It is fitted with a movable arm

ment of the wheels draws the arm down to normal where it is held by the brake. This arrangement permits continuous operation, as a car may be dropped down to the Barney pit before the Barney returns from the dumper.

The platen of the dumper has a fixed elevation and, as the car is delivered to it, it is clamped in place and the car and cradle are revolved through 160 deg., turning the car upside down and dumping the coal into an elevating pan. The pan is placed at a raised position to prevent breakage as the coal is poured from the car and during the dumping operation it is held in a horizontal position.

The pan has a capacity of 120 tons and when a load has been delivered to it, it is lowered to an angle of 50 deg. with the horizontal. As it reaches the hopper into which it discharges, the discharge gates are automatically opened. To prevent any jar the pan engages air cushions as it is lowered.

The receiving hopper which feeds the conveyors going to



Cross Section of the Pier

that is held in the normal position (down) by a brake. With a car at the pit for delivery to the dumper the Barney is put into the forward motion, releasing the brake and allowing the arm to raise to its proper pushing position. As the loaded car reaches the dumper, it pushes off the preceding car which proceeds to the empty yard by gravity over a kick back track. As the Barney is reversed the backward move-

ment of the pier or the conveyor leading to the balancing bin, has a capacity of 15 tons. To eliminate the dropping of coal into this hopper the belt feeders which empty it are controlled automatically by the pan. As the load is delivered from the pan to the hopper, the pan raises itself, automatically cutting off the operation of the feeder belt before the hopper is empty. As another load is delivered the feeder belts

automatically start up again and continue in operation until the raising of the pan again cuts off the operation. By this means the receiving hopper is never entirely emptied of coal and the remaining coal acts as a cushion for other coal as it is delivered from the pan.

Each hopper feeds three belts through three separate feeders. Two of them feed the main carrying belt leading out to the pier and the third feeds the belt which delivers the coal to the balancing bin. The coal can be taken from the hopper by any belt or by all three at the same time.

The incline conveyor which delivers the coal to the balancing bin is provided with a boom conveyor that is operated at various angles to prevent breakage of the coal. The conveyor is pivoted at one end and is carried on a track which allows travel over the entire series of bins. The coal that is delivered to the balancing bin is drawn out for cargo and also for bunker use and for trimming loads. The delivery from the bin is by automatic feeder belts controlled by the operators on the towers.

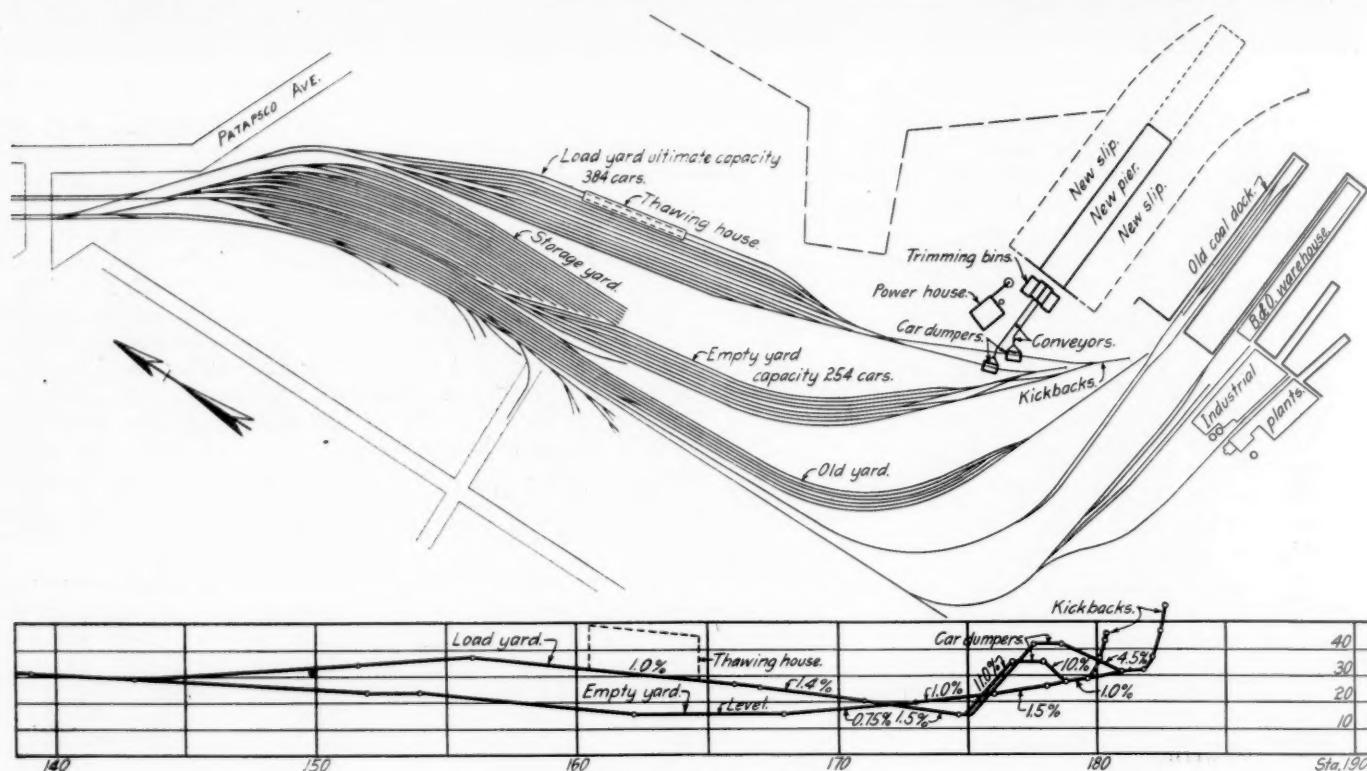
The loading towers, four in number, or two to each pier

ming of the ship simultaneously with the loading of cargo coal, thus effecting a material saving in the time necessary to load a vessel.

Three belts are provided for each car dumper, all being 60 in. wide. Two in each group run out on the pier to the loader and the third runs to the balancing bin. The belt drives are located at the water end of the pier. They consist of two drive pulleys operating as a unit, termed a tandem drive in connection with which the belt passes around a third pulley mounted on a sliding frame which is provided with counterweights. This device automatically takes the slack of the belts in starting and maintains an even tension in them during operation.

All the conveying machinery is operated by electricity. Power is delivered to the sub-station at 13,200 volts and is here converted to 550 volts for use at the machines. The sub-station is equipped with three 500-kw. rotary converters. One unit runs each side of the pier, the third unit being spare.

The power is carried from the sub-station to the pier



Plan and Profile of the Yard and Pier

unit, are each equipped with shuttle conveyors that have a maximum reach of 35 ft. beyond the face of the dock and a vertical variation of 27 ft. The shuttles are reversible so as to deliver coal to either side of the pier. The vertical motion is provided to suit the varying heights of vessels being loaded. These towers are constructed to provide for lowerators to take the coal from the shuttle conveyors and deliver it into the holds of ships without any drop. This feature has been especially provided to handle gas or lump coal where a further prevention of breakage is essential.

In addition to the loading towers each pier unit is provided with a trimming tower. These machines are each equipped with a boom conveyor that rotates through 180 deg. and that has a vertical movement of 57 deg. with the plane of the pier. The boom is 45 ft. long to permit the delivery of coal to the far side bunker hatches. This machine, which has a horizontal movement of the entire length of the pier and which is independent of the other leading machine, is designed to permit the loading of bunker coal and the trim-

ming of the ship simultaneously with the loading of cargo coal, thus effecting a material saving in the time necessary to load a vessel. The cables are flexible and are carried over counterweighted wheels so arranged as to automatically take up the slack and maintain a uniform tension in the cables during the travel of the towers. The control panels are located in the upper frames of the towers and the various control wires which are carried in cables are conducted to the machine in the same manner as the power cables. To allow for the variable elevation of the shuttle and the in-and-out movement, a counterweight is hung in the loop of the cable to take up the slack automatically.

There are two loading and one trimming units for each of the pier halves. Each unit consists of a tower and its conveying belts and each has a capacity of 1,500 and 2,000 tons per hour, depending on the speed of operation. Each unit is operated by a system of automatic control in connection with a master switch located in the office of the superintendent at which the speed of operation is set. All belts

have three speeds, 250 ft., 375 ft., and 500 ft. per min. The purpose of this variable speed, and its absolute control by the superintendent by means of the master switch, is to permit the proper handling of the various grades of coal to prevent breakage.

The operation of a unit after the speed is set by the superintendent is entirely under the control of the operator in the cab located in each tower. While the operation can be stopped by emergency buttons located at intervals of 20 ft. along the conveyors and at convenient points in the structures and in the drive houses, it cannot be resumed except by the operator in the cab. He is in full control of the coal after it leaves the car dumper and can deliver it to any point in the hatch without stopping continuous loading. An operator is required for each machine.

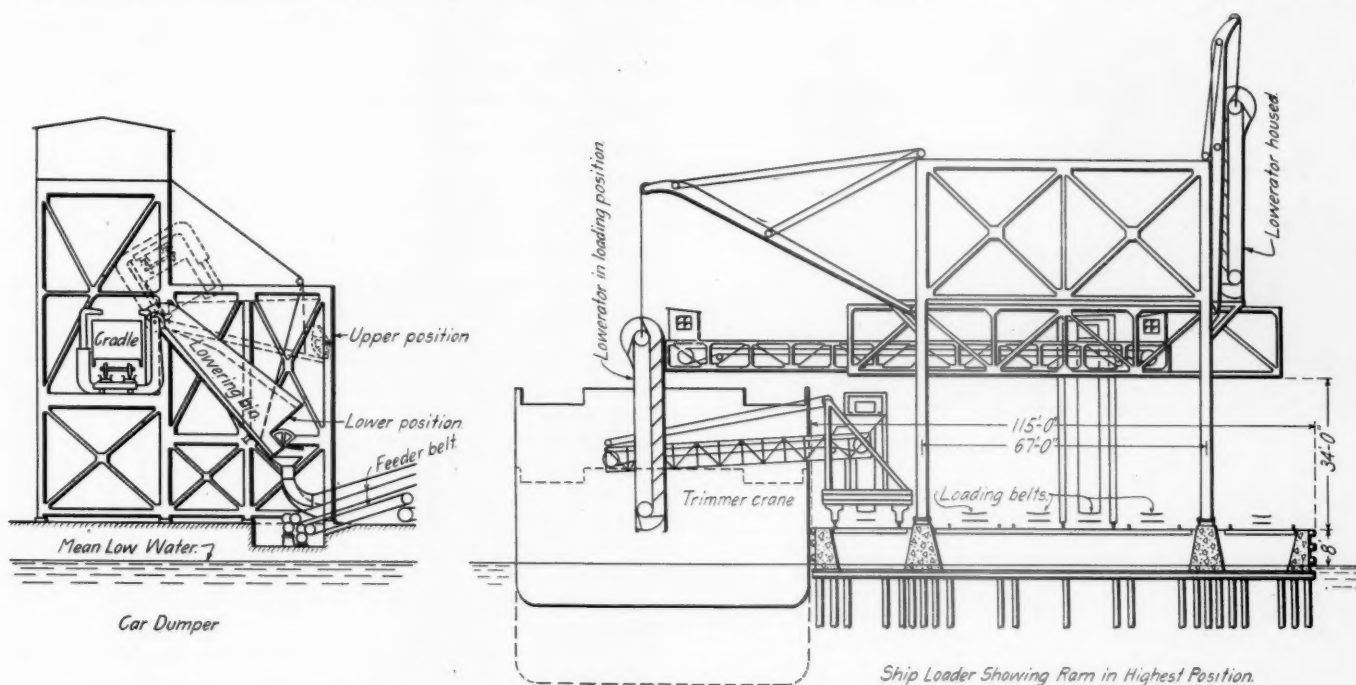
The control through its automatic features is connected so that the various belts start in their proper sequence, thus eliminating all danger of overloading any part of the system. This control is such that when operation is begun the shuttle belt starts first. When it attains the set speed the main belt which supplies the coal to the shuttle belt starts and when its movement reaches the set speed the feeder belt

to 8 hours. Working 12 men, one unit of the new pier will do the same loading in 3 to 3½ hours. While at present only one unit of the pier is in operation, it has happened on three occasions that 165 cars of 50-ton capacity were delivered to the yard simultaneously with the arrival of a vessel. Within eight hours of arrival the cars were unloaded, assembled in trains and were on their return trip to the mines. The actual loading and bunkering of the vessel required less than four hours.

OTHER FACILITIES

The receiving or storage yard that served the old trestle is utilized in the new layout. Cars for the dumpers are delivered from this yard over a hump at the throat of the loaded yard which has a capacity of 384 cars. The loaded yard is built on a grade of 1.5 per cent descending to the Barney pit where the cars are picked up by the Barney and hauled up an 11 per cent grade to the dumper. Leaving the dumper the empty cars pass down a 4.5 per cent grade to the kick back where the movement is reversed and the cars are returned to the empty yard.

Two tracks leading to the car dumper are covered by a



The Lowering Bin in the Car Dumper and the Lowerator in the Ship Loader Eliminate Breakage of the Coal.

starts. The intervals between the start of the belts is about three seconds. When stopping the action is reversed.

In addition to handling the coal with a minimum amount of breakage owing to the use of mechanical means of conveying, rather than gravity, the pier permits of continuous operation at maximum capacity. This feature is accomplished by the balancing bin, as when it becomes necessary to stop the loading towers to shift from one hatch of a vessel to another it is not necessary to interrupt the operations of the dumpers. Instead the coal is temporarily placed in the balancing bin.

The balancing bin is designed to discharge on a belt leading to the trimmer and a belt leading to the tower of each unit, so that it is possible to shut down all other parts of the plant and do such work as trimming or bunkering or other slow work when maximum effort is not required, with only such labor and power as is necessary to run a trimmer and one belt or a tower and one belt, thus cutting the cost of such work to a minimum.

At the normal operating capacity of the old trestle, working 75 men, it was possible to load a 7,000-ton vessel in 7½

steel and concrete thawing shed which has a capacity of 22 cars. In severe winter weather the cars to be dumped are placed in this house where the temperature is kept at 180 deg. and left for 30 min. This thaws the coal sufficiently to permit easy dumping. The thawing house is heated by steam.

The balancing bins, which are built of reinforced concrete, have a total capacity of 5,000 tons. The space underneath the hoppers is utilized for lunch rooms, bath rooms and toilets for the men. Separate quarters are provided for white and colored employees.

The power house is a brick structure and is equipped with Taylor stokers, an air compressor and two boilers of 500 hp. each. The coal for the boilers is conveyed by a belt from a receiving bin operated in connection with the balancing hoppers. The sub-station which is equipped with three 500 kw. rotary converters is located in the power house.

CONSTRUCTION DETAILS

In preparing the site for the pier and in providing the channel approach and the slips on each side of the pier

500,000 cu. yd. of sand and clay was moved by a 20-in. floating suction dredge. The material was pumped to an elevation of 35 ft. and distributed to a distance of more than 2,500 ft. as grading for new and future tracks in the yard layout.

The pier, which is 700 ft. long by 111 ft. wide, is constructed of reinforced concrete and consists of nine longitudinal reinforced concrete stringers supported on 1,656 reinforced concrete piles and carrying reinforced concrete transverse beams and an 8-in. reinforced concrete slab deck. The longitudinal girders were cast to their full depth at the same time as the transverse girders. The floor slabs are anchored to the girders by means of dowels. The construction joints were made over the centers of the cross girders and the expansion joints, three in all, were placed 105 ft. apart. Between the joints the pier is a continuous structure.

The reinforced concrete supporting piles were cast on the ground. After proper seasoning they were loaded on scows by a locomotive crane and towed out to the floating pile driver and were driven by a drop hammer. The piles have a bearing capacity of 40 tons each.

The concrete plant consisted of three scows, one carrying



Looking Down the Pier

a mixer and a clamshell derrick and the other two the materials. The mixer was elevated 30 ft. above the dock level to permit the concrete to be spouted to the forms. The concrete was placed on each side of the pier by moving the scow along the pier. The concrete spout was mounted on a boom to permit lateral motion in placing the concrete.

The entire improvement was developed and patented by Francis Lee Stuart, at that time chief engineer of the Baltimore & Ohio system. The designing and construction was begun and considerably progressed under the personal supervision of Mr. Stuart, and continued by his successors in office R. N. Begien and H. A. Lane, assisted in the designing and erection by M. A. Long, architect and assistant to the chief engineer; W. S. Bouton, engineer of bridges; J. H. Davis, electrical engineer; J. T. Wilson, district engineer and F. C. Thornley, consulting engineer.

The dumpers and loaders on the pier were furnished by the McMyler Interstate Company, Bedford, Ohio; the conveyor runways by Robins Conveying Belt Company, New York; the electric motors and control apparatus by the General Electric Company; the sub-station equipment by Westinghouse Electric and Mfg. Company; the dredging was done by H. S. Kerbaugh, Inc.; the sub-structure was built by the Phoenix Construction Company, and the foundations by the Smith & McCormick Company.

BAVARIA HAS AIR TRAFFIC RULES.—According to a press despatch from Munich the Bavarian Government will submit to Parliament the draft of legislation governing an aerial traffic system in Central Europe now being organized.

POWDERED COAL*

The railways of the United States for the current year are being called upon to pay from 40 to 50 per cent more for fuel than heretofore. Every known method for its conservation should be thoroughly studied to determine what means of handling and burning fuel in locomotive and stationary boilers will result in the largest net saving in cost of transportation.

On account of the heavy business during the past winter and the difficulty in maintaining the proper fuel supply, inefficiency has resulted, due to the fact that the locomotives have not been provided with their regular grades of coal. If pulverized fuel were used on the locomotives, it would not be necessary to have so many different grades of fuel, with consequent increased number of cars under load.

The use of pulverized fuel would be attractive in forest regions where at present, through public control, locomotives are required to burn fuel oil.

The average mechanical delay on one of the largest roads at its heaviest running repair station is from 10 to 11 hours, and the lowest delay at its despatching stations is from 3½ to 5 hours, with an average of something over 6 hours for all stations. There is no question but that the elimination of the existing ash pit delays by the use of pulverized fuel would reduce the terminal delay to one-half of what it is at the present time, and this opportunity for relieving the yard congestion would seem to be the most efficient and economical means for increasing the net earning capacity of the railroads.

Attention is also called to the fact that only about two-thirds of the total fuel purchased for locomotive operation is actually utilized while hauling trains, the remaining one-third going into the so-called "stand-by" loss, including the cleaning, building and maintaining of fires on grates during the period the engine is standing or otherwise not utilizing steam for locomotion, either light or with train.

The advantages of pulverized fuel are not only represented by the actual reduction in the total pounds to be saved as compared with fuel fired on grates, but it should be measured by the actual cost of operation and maintenance, opportunities for reducing which are many, such as, through increased handling capacity due to sustained boiler capacity and larger exhaust nozzles; simplified means of stoking and burning the fuel; and by the elimination of smoke, sparks, cinders, fire cleaning, grates, ash pans, smokebox draft appliances and firing tools.

The field for development of pulverized fuel in railway blacksmith shops would appear promising, and many investigations are being made, but the committee is not aware of such use of the fuel by railways up to the present time.

Transportation with Pulverized Fuel.—In general, what is desired by the operating department of a railway is motive power in the most flexible form. It is intended, in what follows, to indicate how the use of pulverized fuel, in actual service, will give this.

The amount of fuel fired, per unit of time, is under the direct and constant control of the fireman. Each powdered fuel feeder has a capacity range of from 500 to 3,000 or more pounds of fuel per hour, and as from one to five of these feeders may be applied to a locomotive according to its size, and as any number of these feeders may be operated, it will be seen that the total amount of fuel required can be regulated to cover any service demands made upon the boiler up to practically the capacity of the injectors. If the heavy demand is of long duration, no loss in steam will result, as obtains when burning coal on grates by reason of the fire becoming heavy and clinkered, or full of banks or holes. When the work of the engine eases off, the fuel supply can be at once reduced accordingly, and on long drifts or where

*Abstract of a committee report presented at the 1917 convention of the International Railway Fuel Association.

the train is set off along the road, the supply may be stopped entirely, thus putting out the fire. This range of firing from full load to no load is all controlled most easily by the fireman. This flexibility of steam generation is being demonstrated daily in regular service, by the heaviest Consolidation type of locomotive ever built, operating under exceptionally heavy train loads.

Availability for service on call is much enhanced by the use of pulverized fuel. When engines are going out on as short time as possible, the elimination of fire and ash-pan cleaning is a great advantage, both in time and labor. Again, the item of grate repairs, necessitating dumping the fire, with, in consequence, a considerable delay, is done away with. Front ends need little attention, as there can be no filling up with cinders nor clogging of netting,—first, because no cinders are carried over, and second, because there is no netting. If engines are being held for any length of time, there is no holding over of fires, with considerable cost and a second cleaning before service often necessary, nor is there the expensive dumping and comparatively slow fire-building on call to contend with. A pulverized fuel burning locomotive can be on its train and ready to go, in one hour from time the fire is started, under ordinary engine house conditions.

The firing up time for a mixture of anthracite and bituminous coal is as follows, these figures being the average of a large number of actual observations of this matter:

MIXTURE.

Approximately 60 per cent anthracite and 40 per cent bituminous.	
Initial Temp. of Water in Boiler	Time to Raise to 150 lb. Steam
70 deg.....	52 min.
100 deg.....	44 min.
200 deg.....	35 min.

This is about as fast as it is proper to fire up a boiler. On the arrival at end of the run, the engine can be placed in the house in 15 or 20 minutes after being cut off from its train. There is, of course, work sometimes to be done in the firebox of an engine, using this fuel, such as brick repairs and the removal of slag from the furnace, and in such cases several hours must elapse after the time of extinguishing the fire, on account of the brickwork retaining its heat, as in the case of an oil burner. With properly prepared fuel, correct furnace design and intelligent operation, no trouble from honeycomb will appear, and the brickwork will also have a reasonable life.

Delays at the fueling plant will not be of moment, as fuel is now taken at an average rate of about 10 tons in from 10 to 12 minutes, and this can be accelerated by enlarging the fueling outlets. It should also be borne in mind that this fuel does not freeze in the bins and make the fueling of engines the very difficult operation which is now often the case during the winter months.

Definite information is not at hand to indicate just what may be expected as regards long engine divisions, but there seems to be no good reason why engines cannot make from 200 to 250 miles, or even more, without having to dump slag or to do more than take fuel and water en route. General experience will indicate this to be possible, but it has not been, as yet, actually demonstrated on continuous trips with heavy trains.

Delays on the road for steam or other causes are reduced. The effect of weather on steam making is reduced by reason of the fact that no fuel saturated with rain or mixed with ice and snow is thrown into the firebox to reduce its temperature below normal.

The apparatus itself is getting pretty well standardized and, if given the care that any locomotive machinery should have, will operate without failure indefinitely.

Safety in train operation is enhanced by the fact that the fireman rides his seat practically over the entire road and can, and should, devote a large part of his attention to track and signals. The glare from the firebox door, especially at

night, when it is sometimes very annoying as regards track observation, is eliminated.

The fireman is able, at all times, to assist the engineer in whatever way desirable to enhance the safe and speedy handling of the train. The use of pulverized fuel will react to give higher grade engineers in the future than could be expected if the laborious grate-firing methods are continued.

It can be consistently stated that the firing of locomotives with pulverized fuel will reflect most favorably on conducting transportation.

Burning Anthracite Refuse in Pulverized Form.—The average output of the anthracite coal fields of Pennsylvania was, for the five-year period ending December 31, 1915, practically 70,000,000 tons. About eight per cent of this total output can be considered as waste, it being of such a nature that its satisfactory combustion, either in hand or stoker fired furnaces, is not possible.

The utilization of this culm in pulverized form is possible and practicable, and has been in use at a colliery in the Scranton district of Pennsylvania for about two years. Drying, pulverization and handling is accomplished in the usual manner, the product averaging about 14 per cent. through a 100-mesh screen and 86 per cent. through a 200-mesh. No difficulty is experienced in handling, but the wear on the type of pulverizer in use is somewhat higher than when straight bituminous is being worked.

Locomotive No. 1200 on the Delaware & Hudson is in regular operation, in heavy freight service burning a mixture of 60 per cent. of the above fuel and 40 per cent. of pulverized bituminous coal. Varying mixtures of these two fuels have been tried with this engine, but the one mentioned above seems to give the best all-around results, although developments to increase the percentage of anthracite, are now being made. Under the very strenuous conditions of locomotive service it is evidently necessary, in order to supply a fuel flexible enough in action to meet the varying needs, to have an average volatile content somewhat higher than anthracite alone gives.

There is, however, a stationary Stirling boiler of 463 rated horsepower on the Delaware & Hudson, which operates very successfully with the straight pulverized anthracite. When starting up this boiler, pulverized bituminous is used until the refractory material in the boiler furnace is well heated, after which anthracite is burned alone and very satisfactorily. From the test reports the maximum observed equivalent evaporation from and at 212 deg. was 9.6 lb. of water per pound of dry coal, and the average was 8.9 lb. These results are very good when compared with hand-firing of steam sizes of anthracite coal in stationary boilers of this type. Under these latter conditions, an evaporation of from five to six pounds of water may be attained. By the use of pulverized anthracite it is safe to say that the horsepower output of any good sized modern stationary boiler now burning buckwheat or other prepared sizes of anthracite will be doubled. The use of this fuel will also release other and more valuable (commercially) coals to the general market and reduce the boiler plant labor from 30 to 50 per cent.

Development on the Delaware & Hudson.—The Delaware & Hudson operates in the anthracite coal fields of Pennsylvania, adjacent to a territory which now produces about 80,000,000 tons per year. In this field there is available approximately 550,000 tons per month of fine dust which cannot be burned on grates. This road built a locomotive to endeavor to utilize the waste anthracite product. The entire firebox, boiler and locomotive were of the same design as for burning coal on grates, with the exception that pulverized fuel mechanism was applied.

Such minor difficulties as were experienced with the mechanism for introducing the fuel into the firebox have been satisfactorily eliminated, and it has been demonstrated that the burning of pulverized in suspension in the locomotive firebox has passed beyond the experimental stage.

The locomotive is performing daily in regular road service in the Wilkesbarre-Carbondale mine district, where the fuel preparing plant is located.

This locomotive is hauling over a 1.65 per cent grade one and one-half miles long and with 6-deg. curves, a train load of 1,562 actual tons, or 23 loads. On a 0.6 per cent grade it is reported to be hauling 2,500 actual tons, or an increase of $13\frac{1}{2}$ per cent over its calculated capacity of 2,200 tons. On a recent trip between Carbondale, Pa., and Oneonta, N. Y., a district run of 94 miles, it handles 3,458 actual tons in a train of 57 loads, and successfully negotiated a ruling grade made up of one and one-half miles of 0.4 per cent, one-half mile of 2 per cent, three-fourths mile of 0.48 per cent, and two and one-half miles of 0.3 per cent. grades.

Development on New York Central Lines.—The New York Central has, during the past year, equipped one of its Pacific type freight locomotives with pulverized fuel burning apparatus and is now conducting tests of various Pennsylvania bituminous fuels in freight and passenger service, between Albany and Utica, N. Y., on runs of about 95 miles, with the idea of perfecting the use of this coal in pulverized form as a substitute for fuel oil in the Adirondack forest district. The committee understands that these tests are nearing completion and the results have been quite satisfactory.

Development on the Missouri, Kansas & Texas.—The Missouri, Kansas & Texas is now firing 3 batteries, each of two 250 h. p., Heine-O'Brien type of boilers, set originally for burning natural gas, with powdered coal. The boilers were changed by adding a Dutch oven, side cleaning doors, and changing the baffles from horizontal to vertical.

Coal from three districts has been used, having about the following proximate analyses:

	Fixed carbon	Vol. matter	Ash	Moisture	B. t. u.
Lignite—Texas	25	34	8	33	11,250
Slack—McAlester, Oklahoma	47	33	14	6	12,630
Slack—Southern Kansas	45	27	20	8	11,580

Data from several trials show a furnace and boiler efficiency of about 69 per cent for lignite, 68 per cent for McAlester slack and 61 per cent for Southern Kansas slack.

The cost of preparing the fuel is given as \$1.17 per 2,000 lb. for lignite, \$0.34 for McAlester slack and \$0.35 for Southern Kansas slack.

Boiler trials using natural gas at \$0.125 per 1,000 cu. ft. show a cost of \$0.16 for evaporation of 1,000 lb. water from and at 212 degrees; while the average cost when using Southern Kansas slack is \$0.12, a saving of 25 per cent in favor of pulverized fuel. A comparison of tests made with lignite, however, does not show any saving in cost, which may be due to the trouble experienced in reducing the high moisture content of lignite.

It may be of interest to state that a carload of front end cinders was placed by accident in the power plant, dried, pulverized and burned without the least inconvenience. No case of fire or explosion has occurred with the use of pulverized fuel. A magnetic separator is used to remove the pieces of iron from the coal before crushing and it has fully demonstrated its utility. Thorough examination of the boilers at wash-out periods revealed no flaws, cracks or deterioration at any point in the furnace.

In inaugurating the use of pulverized fuel many obstacles had to be overcome and adjustments made to suit local conditions before practical operation was attained. But it has been demonstrated that pulverized fuel is an efficient and successful fuel for stationary boilers.

The Missouri, Kansas & Texas also reports the equipping of a ten-wheel passenger locomotive during the latter part of 1916, the general design of the fuel feeding equipment being similar to that of Delaware & Hudson locomotive. The locomotive is now operating in local passenger service burning the Kansas slack. On runs which require the use of from 5 to $5\frac{1}{2}$ tons of Kansas modified lump grade of

coal when fired on grates, about 4 tons of pulverized slack is burned without smoke, sparks, or cinders, and maximum steam pressure maintained. After several recent runs approximating a total of 520 miles with this low grade coal an examination of the tube sheet showed it to be entirely clean of any honeycomb and with no cleaning off from time this mileage commenced.

Development on Foreign Railways.—The only applications of interest that have been brought to the attention of the committee are those of Central Railway of Brazil and the Swedish State Railways.

The Central Railway of Brazil, after considerable investigation of the pulverized fuel burning locomotives in this country, decided to equip its locomotives for burning fuel in this form. The burning equipment is to be practically a duplicate of that which was installed on the Delaware & Hudson Consolidation locomotive.

The Swedish State Railways have been experimenting with powdered peat, there being no coal deposits in that country. The results of the experiments have been so satisfactory that the railway directors recommended an appropriation of \$350,000 for the installation of facilities for producing sufficient powdered peat to supply all the locomotives on one of the state railways.

The heat value of the peat was 7,740 B. t. u., as compared with 12,600 B. t. u. for the coal, it having been determined that 1.45 lb. of powdered peat would produce the same amount of steam as one pound of the British coal. Firebox temperatures of 3,040 deg. F. were obtained with the powdered peat, as compared with 2,750 deg. F. with the coal. The smokebox temperatures averaged somewhat less with the powdered peat, but a higher degree of superheat was obtained with it than with the coal. The efficiency of the boiler figured 73 per cent for powdered peat and 65 per cent for the coal.

The report is signed by: W. L. Robinson, chairman; H. T. Bentley, W. J. Bohan, H. B. Brown, M. C. M. Hatch, R. R. Hibben, D. R. MacBain, J. H. Manning, H. C. Oviatt, John Purcell, and L. R. Pyle.

DISCUSSION

Pulverization is the only means of utilizing lignite which is found in great quantities in the western section of the country, and affords a means of obtaining a cheap fuel with a high heating value. At present coal is hauled long distances to sections where lignite is available and the long hauls would be eliminated if lignite were used. In some sections of the west, the oil supply is becoming exhausted and pulverized lignite will provide cheap fuel for these districts. The advisability of pulverizing bituminous coal for locomotive use was questioned. Doubt was expressed as to the possibility of reducing the time engines were held at terminals as much as was stated in the paper and the possible reduction in the size of exhaust nozzles was also questioned. Some improvement might be secured by special designs for fire boxes to secure better combustion in burning pulverized coal. The principal trouble now experienced on locomotives burning powdered coal is the formation of clinker on the tube sheet. This may be due to moisture coming from leaks or in the coal itself, or it may be due to tar or to sulphur and iron in the coal. The committee was asked to devote special attention during the coming year to means for eliminating clinkering on the tube sheet.

GERMAN UNDERGROUND RAILWAY TO THE FRONT LINE.—Mr. Warner Allen, an English war correspondent, writing of the enemy's fortified positions on the French front, said that in the hills of Champagne, tunnels had been dug until the slopes were a veritable rabbit warren. Some of these tunnels were nearly a mile long, and in at least one case a light railway was brought up underground to within 100 yards of the firing line.

of 300 commodities as reported by the Bureau of Labor Statistics from 1907 to 1916, showing an increase of nearly 40 per cent, while for 1917 it represents the average of Dun and Bradstreet index numbers reduced to the same basis, showing an additional rise of about 50 per cent this year.

The "high cost of living," as it affects the railroads, was also graphically shown in charts prepared for the Interstate Commerce Commission and made public at the hearing. These charts show the great advance in iron, steel and other metals used by the carriers, as well as the decline in prices of railroad securities.

Pig iron has advanced 112 per cent since the close of the last fiscal year; steel billets, 90 per cent; structural steel beams, 58 per cent; all metals, 26 per cent. The general level of all commodities has advanced 45 per cent in the past two years and 31 per cent since last July.

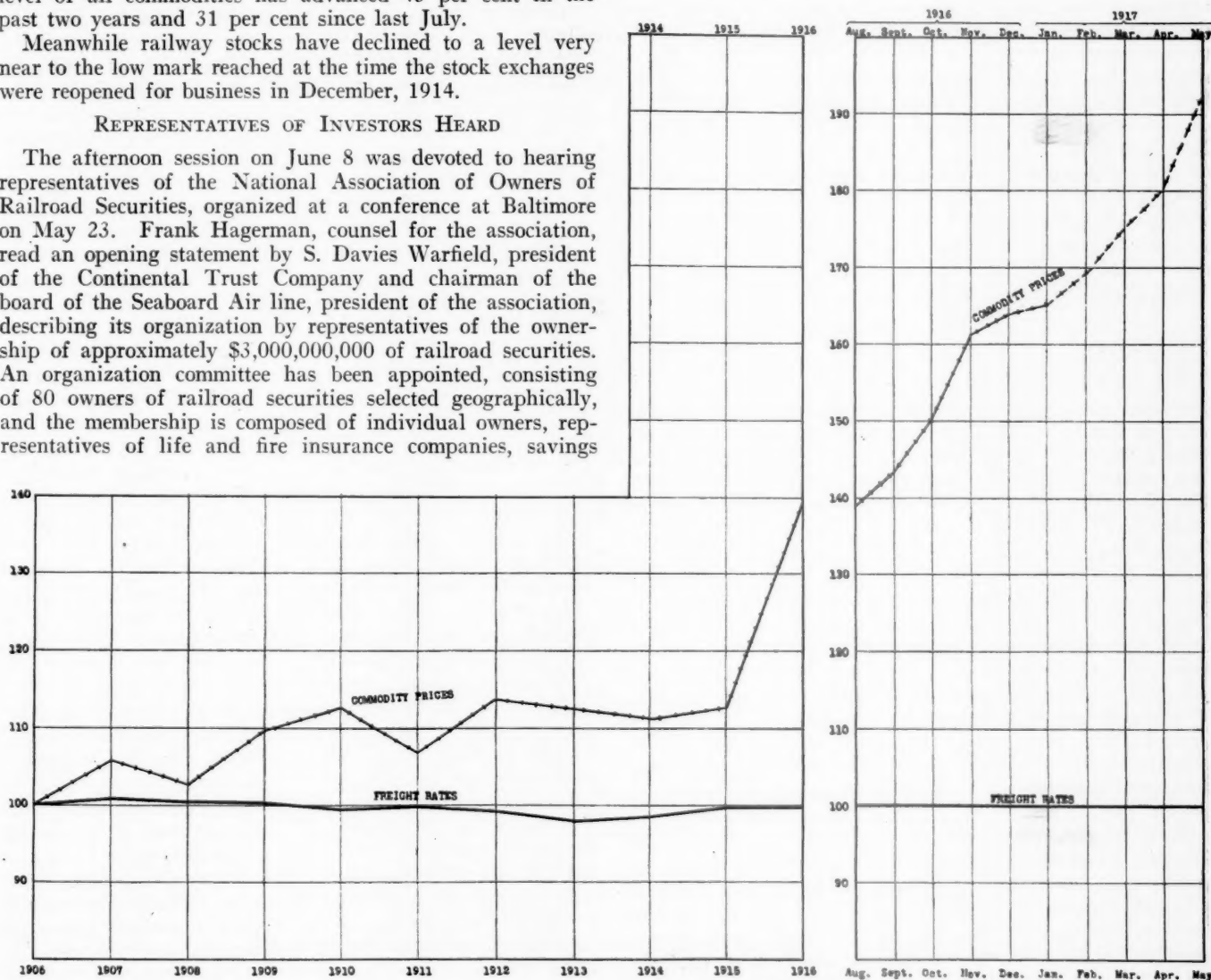
Meanwhile railway stocks have declined to a level very near to the low mark reached at the time the stock exchanges were reopened for business in December, 1914.

REPRESENTATIVES OF INVESTORS HEARD

The afternoon session on June 8 was devoted to hearing representatives of the National Association of Owners of Railroad Securities, organized at a conference at Baltimore on May 23. Frank Hagerman, counsel for the association, read an opening statement by S. Davies Warfield, president of the Continental Trust Company and chairman of the board of the Seaboard Air line, president of the association, describing its organization by representatives of the ownership of approximately \$3,000,000,000 of railroad securities. An organization committee has been appointed, consisting of 80 owners of railroad securities selected geographically, and the membership is composed of individual owners, representatives of life and fire insurance companies, savings

the aggregate to \$17,000,000,000, is represented by bonds and other evidences of debt, and the same proportion would maintain in the membership of the association. Three-fifths of the securities of the carriers have no representation in their management; the other two-fifths, which represents the stock, have representation through directors. Under these conditions we made the request that we be heard independently of the carriers in the presentation of their case, and as a most important element in the consideration of the subject before you.

"The question of the stabilizing of the securities of the carriers now in the hands of the present owners thereof, is not the only one involved; but, the stabilizing of them becomes essential in the future financing of the requirements



The Rise in Commodity Prices Contrasted with Eastern Freight Rates, 1906-1917.

banks, fiduciary and financial institutions and trustees of estates. "It thus represents," he said, "the holders of life insurance policies, who, through their policies, have a very definite ownership in railroad securities, and the depositors of the savings banks of the country, who have a definite ownership in the securities owned by their banks. Through these and other sources, over 50,000,000 of the people, nearly one-half of the population of the country, have a definite fixed ownership in the securities of the carriers of the country.

"Your attention is asked to the fact that approximately three-fifths of the total capital of the carriers, amounting in

of the carriers. It can safely be said that this association not only very largely represents the sources which have supplied the money to the carriers to enable them to conduct their business in the past, but these same sources of supply must be largely looked to for the future financial requirements of the carriers. So that the statements made here today by the men who will represent the several interests concerned become very important, and we hope we may be able to be of assistance to your honorable commission in your decision of the grave questions now before you."

Darwin P. Kingsley, president of the New York Life Insurance Company, said he appeared on behalf of the 33,-

Rate Advance Hearings Completed

Commission to Decide Case by First of July. Representatives of Railroad Investors Heard. Final Arguments

THE hearings before the Interstate Commerce Commission on the general 15 per cent advance in freight rates proposed by the railways was concluded on June 12 and the commission is to decide by July 1 whether it will suspend the blanket supplements proposing the advance, whether it will allow them to go into effect, or whether some other plan for dealing with the situation should be attempted. Oral arguments were heard by the commission on Saturday, Monday and Tuesday, immediately following the conclusion of the testimony on Friday of last week, Thursday and Friday morning having been devoted to rebuttal testimony on behalf of the carriers and Friday afternoon to the testimony of representatives of the National Association of Owners of Railroad Securities. The concluding testimony on behalf of the protestants was presented by Clifford Thorne and Graddy Cary of the committee representing the National Shippers' Conference. The counsel for the roads announced that Mr. Thorne's exhibits were so voluminous they could not hope to examine them in detail in the time allowed and would therefore waive cross-examination.

RAILROAD REBUTTAL

Frank Nay, comptroller of the Chicago, Rock Island & Pacific, and L. E. Wettling, statistician of the western roads, presented some exhibits in rebuttal, making corrections on some of the exhibits filed by the shippers. Mr. Nay particularly attacked an exhibit prepared by Mr. Cary to show that roads carrying two-thirds of the traffic have \$1,000,000,000 of surplus which they could use to meet the increasing expenses, of which, Mr. Cary said, \$800,000,000 is in the form of cash and marketable unpledged securities. Mr. Nay showed that for the western roads most of the surplus is in the hands of three systems, the Chicago, Burlington & Quincy, the Union Pacific, and the Atchison, Topeka & Santa Fe, that most of the surplus is invested in property and could not be used and that the cash on hand is only sufficient to meet the current requirements of the business. He showed that while these three roads have an excess of current assets over current liabilities of \$199,000,000, all western roads have only about \$100,000,000. Therefore, the remaining roads have an excess of current liabilities over current assets.

E. P. Ripley, president of the Atchison, Topeka & Santa Fe, was called to the stand to make a brief explanation as to why the Santa Fe had on June 30, 1916, over \$43,000,000 cash on hand. Mr. Ripley explained that this was an abnormal amount because the company had raised approximately \$15,000,000 by the sale of bonds and preferred stock in the fiscal year 1915 and it also had an unexpected increase in its income after the payment of interest in the year 1916 of \$8,500,000 more than the year before and it had expended less than was anticipated because of the difficulty surrounding improvement work and the scarcity and high prices of labor and materials. He said that the company pays in interest and dividends nearly \$32,000,000 a year and has occasion to spend in addition between \$10,000,000 and \$30,000,000 a year on additions, betterments, extensions, etc., and that these transactions call for a large amount of cash. It has been found convenient to keep on deposit in banks along its lines \$5,000,000 to \$6,000,000, which amount cannot be radically reduced without causing inconvenience. It is also considered necessary to keep a minimum of about \$15,000,000 on deposit in New York.

In order to pay for betterments, extensions, etc., capital has to be raised in advance and whenever money conditions are most favorable. The accumulation of cash in 1916 was greater than had been anticipated because in connection with the increase of its income the company had raised more money by the sale of securities than was found to be necessary in view of the slowness with which additions and betterments had to proceed. J. V. Norman asked Mr. Ripley whether he would say that an emergency existed if all the western roads were in the same condition as the Santa Fe. Mr. Ripley replied that he did not know that he would, but that his road was confronted with an emergency in the matter of expenses, while it knows it cannot further increase its earnings because its traffic is now up to its full capacity unless its facilities can be increased.

D. M. Goodwyn, general freight agent of the Louisville & Nashville, and George W. Lamb, assistant comptroller of the same road, testified on behalf of the southern lines. Mr. Goodwyn made the announcement that the southern roads were willing to meet the objections of the lumber shippers to a 15 per cent advance by proposing an advance of 1 cent per hundred pounds.

E. C. Blundell, division superintendent of the Chicago, St. Paul, Minneapolis & Omaha, at Omaha, Neb., testified regarding an exhibit introduced by U. G. Powell, of the Nebraska railroad commission, describing a plan of rearranging train runs on Mr. Blundell's division for the purpose of offsetting the increased expense caused by the Adamson law. Mr. Blundell said he had secured authority to try a shortening of train runs on his division as a test and thought he could effect a saving; but that the plan had been in effect since January, and in May his overtime payments were greater than they had ever been. The plan had resulted in no economies and its only advantage was that more of the shorter runs were accomplished in daylight. He said it had required four additional engines and way cars, as well as additional crews, and that it would be discontinued.

Julius H. Parmelee, statistician of the Bureau of Railway Economics, presented some revised figures for the eastern roads, showing that the estimated increase in revenue to be derived from the proposed increases in rates and the rates advanced since January 1 would amount to \$158,585,000 for 38 eastern roads, or 13.17 per cent of the freight revenues, based on 1916 traffic. Another exhibit showed the increase in wages due to the Adamson law to be \$36,000,000 and other increases in wages, \$29,000,000, making a total increase in payroll of 10.89 per cent. The revised estimate of increased cost of fuel was \$68,438,000, or 63.87 per cent. A combined statement for the Baltimore & Ohio, New York Central and Pennsylvania for April and the 10 months ending April 30, showed an increase in total operating revenues of 10.09 per cent for the month and 9.98 per cent for 10 months, while the net operating income declined 21 per cent in April and 11.74 per cent for 10 months. For the four months of 1917 while operating revenues increased 6.5 per cent the net operating income decreased 38.07 per cent.

The accompanying chart, illustrating the enormous rise in commodity prices from 1907 to the present time, while freight rates have remained stationary, was also introduced. The freight rate line represents the average receipts per ton mile of 38 systems in Official Classification territory, with 1917 approximated, showing no change after 10 years. The line for commodity prices represents the average wholesale price

000,000 policy holders in insurance companies, representing an investment of \$1,550,000,000 in railroad securities, the greater part of which investment was made before the Interstate Commerce Commission assumed its power over the railroads, and that 90 per cent of these are people who would never own a bond or a share of stock but are "capitalizing their lives" and trusting to the directors of the companies to protect their investments. He said the insurance companies are steadily losing faith in railroad investments and practically buy no junior bonds, while the purchase of outstanding securities does not help to finance the railways. "If a road is to serve the country effectively," he said, "it must be able to finance itself. To sell its securities to life insurance companies hereafter a road must show that its revenues are sufficient to cover depreciation, upkeep, interest, amortization, and a reasonable surplus after paying the stockholder a fair return on his money." Because the factor of safety in railroad bonds, according to the method of figuring used by his company, has been unsatisfactory, having been none too high in 1916 and now declining, the insurance companies, he said, are reducing the proportion of their investments in railroad bonds.

"Having been granted and having assumed the power to regulate these carriers and to fix their rates," Mr. Kingsley continued, "it follows that in all cases where insurance directors have bought railroad securities with sound judgment, your duty to use your power to protect the integrity of these securities is akin, at least, to the duty of the government to protect the lives and the liberties of the people. A denial of the prayer of the railroads for relief will remove the relation between railroads and life insurance companies into a doubtful zone. As things stand now there is danger that the life insurance companies will sustain loss—I don't talk about disaster. They have obligated themselves to serve the people at the lowest possible cost and any depreciation in their securities has to be charged to profit and loss."

Mr. Hagerman had asked that the witnesses all be allowed to complete their statements and that the cross-examination be held afterward, but the commission ruled that the allotted time should be divided evenly between testimony and cross-examination. Clifford Thorne, Luther M. Walter and A. E. Helm asked many questions in the effort to show that other securities had declined more than railroad bonds and that the decline in railroad credit was due to pessimistic publicity and high finance. Mr. Kingsley said that municipals had recently gone up so much that they are practically no longer purchasable, and that, while the bonds of some foreign countries have declined, the decline has in many cases been less than that of railroads.

H. A. Schenck, president of the Bowery Savings Bank and president of the Savings Bank Association of the State of New York, said that the 10,000,000 savings bank depositors have an average investment of \$80 each in railroad securities. The natural consequence of an increase in rates, he said, will be that savings banks, private investors, members of labor unions, shippers, merchants and the public generally will be tremendously benefited, "and, we believe, would do more for the prosperity of the country than any other one thing that could happen at the present time."

Robert F. Maddox, president of the Atlanta, Ga., National Bank, said in part:

"The trust companies and banks of the country, according to the report for 1915 of the comptroller of the currency, owned railroad bonds amounting to \$1,704,600,000. If we exclude the savings banks, the amount owned by the other banks and trust companies was \$864,090,000. The national banks alone as of June 30, 1916, owned no less than 467 million of railroad bonds. It is not possible to determine with the same accuracy the bank and trust company holdings of railroad stocks, but these are estimated at \$440,000,000.

"In addition the trust companies represent also a very great sum, the exact amount of which it is impossible to determine, owned by the various trust estates, etc., in their hands. It is important that the purchase of railroad securities by banking institutions should be maintained for two reasons: (1) that the railroads may have access to the capital supply in the banks themselves to the extent that this capital supply is available for investment in bonds and securities, and (2) that the railroad securities may be purchased by those private investors who follow the lead of the banks and trust companies in investments. In many communities private investors will purchase only those bonds in which the banks have first shown their confidence by purchasing for their own account. A decrease or cessation of the purchase of railroad securities by the banks will not only prevent the railroads from obtaining such banking funds as are available for this purpose, but will also make the absorption of railroad securities by private investors very much more difficult.

"Already by June 30, 1915, the tendency on the part of the banking institutions of the country to purchase less railroad bonds had become well marked—a tendency which has gone on increasing since that time, and I submit herewith a table of the holdings of bonds by the banking institutions of the United States as of June 30, 1910, and June 30, 1915.

	June 30, 1910.	June 30, 1915.	Increase.	
State and Municipal...	\$1,116,200,000	\$1,494,000,000	\$377,800,000	33.8%
Railroad	1,464,800,000	1,704,600,000	239,800,000	16.3
Public Utility	478,000,000	663,900,000	185,900,000	39.1
Unclassified	890,900,000	1,208,200,000	317,300,000	35

"From this table it will be noted that the percentage of increase in railroad bonds is *less than one-half* of the percentage of the increase in other types of bonds.

"An analysis of the investments made by national banks alone shows that during the past eight years there has been a steady decrease in the proportion of railroad bonds to their total holdings of securities (exclusive of U. S. Bonds). In 1909 no less than 37.3 per cent of the security holdings of the banks were in railroad bonds, whereas in 1916, only 28.8 per cent were in that class.

"This tendency is due not only to hesitation on the part of banking institutions together with the general investing public as to the future of the railroads and doubt whether they are being allowed to earn sufficient sums for the needs of their business, but also quite obviously to the steady decline in the selling price of railroad securities over a period of some years.

"To show this decline I submit a list of the rates of yield of 10 selected industrial bonds and of 20 selected railroad bonds covering the past 15 years, from which it appears that not only have *railroad bonds pretty steadily declined so that bonds which yielded 4.10 per cent in 1903 declined in June of this year to a price showing a yield of 4.91 per cent*, but also, what is very significant, that the industrial bonds, which at the beginning of the period showed a yield of 5.69 per cent, during the same period *increased in price* so that on June 1 of this year they were selling at a price showing a yield of 5.23 per cent.

"Consider for a moment what has happened in only the last five months—the period since the first of the year. I have had prepared and submit herewith a list of 21 standard industrial and miscellaneous bonds showing the prices at which they sold on January 2, 1917, and June 2, 1917, and a similar list of 26 representative railroad bonds. These lists show that the average decline for the past five months was, in the case of industrial bonds, only 1.65, while for the railroad bonds there was an average decline of 6.51—a result all the more striking when one realizes that industrial securities are supposed in general to fluctuate much more than railroad securities.

"With these facts before us, how are these securities to

be stabilized in the interest of the government's and people's direct needs, as well as their indirect needs through the railroads—needs all the more urgent in the public interest because of the war? The only way by which this confidence can be maintained is by such action on the part of your honorable commission towards the carriers as to convince the great public of the United States that the needs of the railroads will be met not merely in a narrow or technical sense, but that they will be met in such a spirit of co-operation as will cause the public to feel confidence in the future of railroad securities as well as in their present status."

John E. Oldham, of Merrill, Oldham & Company, Boston, said that the very general apprehension which at present exists in regard to the credit of the soundest railroads of the country is not the result of recent developments. The existence of factors which have been undermining railroad credit has been understood by those familiar with railroad affairs for some time. The past revenue has not been sufficient to provide a suitable return on the capital.

FINAL ARGUMENTS

The argument on behalf of the eastern roads was presented by George Stuart Patterson, general solicitor of the Pennsylvania Railroad.

Mr. Patterson said that the year ending June 30, 1916, was the first really good year that the Official Classification lines as a whole have had since 1910. Their operating revenues increased \$272,000,000 over 1915, operating expenses increased \$104,000,000, taxes increased \$3,000,000, while net operating income increased \$155,000,000, which afforded a return of 6.64 per cent on property investment, or the highest return in any one of the last 17 years. The commission in the 5 per cent case, in speaking of the financial results of the period 1900-1913 said that the net operating income of the carriers in relation to property investment had become too low. The period 1914-1916 includes the year of lowest return, the year of highest return and the year of next to the lowest return, and the tables for the 38 eastern roads show that measured by return on property investment, on capital obligations or on capital stock, the periods which include the three years 1914-1916, tested by averages of three, four or five years, respectively, show the lowest financial return to the carriers. Therefore, Mr. Patterson said, the net operating income of these lines as a whole was still so low as to be contrary to the public interest. He also showed that though for the year ended June 30, 1916, the net income was 10.69 per cent of the capital stock, or over double that of the preceding year, yet the average rate of dividend, 4.33 per cent, was the lowest since 1904, and slightly less than in the preceding year, and that in 1916 over \$50,000,000 was paid out of income and surplus for additions and betterments, as compared with \$12,000,000 in the preceding year.

The total results of the estimates of the carriers show, he said, that based on the 1916 business, the additional revenue from all increases in rates, including those effective since January 1, 1917, as well as those proposed, will amount to \$158,000,000 for the 38 roads, as compared with a prospective annual increase in expenses of \$235,000,000, made up of \$77,000,000 for increased wages, \$68,000,000 for increased fuel costs, and \$89,000,000 for increased cost of materials. Applying to the business of 1916 the estimated increases in expenses and earnings Mr. Patterson showed that the net operating income would be 5.42 per cent, whereas the return for 1916 was 6.53 per cent, and on the basis of rates in effect on January 1 the return would be only 3.12 per cent. In conclusion, Mr. Patterson said:

"One of the first duties which the United States is called on to perform is to furnish food and supplies of all kinds to our Allies, and that food and material must be moved with the utmost expedition to the seaboard. Then will come

the construction of mobilization camps, the installation of railroad facilities at those camps, the movement of raw material to, and of the manufactured product from the plants engaged in government work. All this traffic must be moved and moved quickly, and doubtless in many instances such movement will mean increased empty car mileage, diminished train loads, and additional shifting and yard movement.

"But however that may be, there is one thing that is absolutely certain, and that is that track and equipment must be maintained, that needed repairs ought not be deferred to await more favorable labor and material prices; and it is to the accomplishment of these results that the rate increases asked for bear an immediate and definite relation, quite apart from the necessities of the carriers in the handling of the ordinary domestic traffic of the country.

"It was suggested by one of the witnesses for the protestants, that the railroads might properly 'bear their share of the burden of the war' by foregoing their just return during the war, by doing without an increase in rates. It should however be remembered that railroad rates and railroad dividends have, in effect, been reduced by the diminished purchasing power of money owing to the higher prices of commodities and labor, and to that extent an increase in rates is not in reality an increase at all.

"The above suggestion, however, is economically unsound and contrary to the public interest.

"Even if the rate increase be granted, the railroads are still participating in bearing the burden of the high cost of living incident to the war, because the increase asked for will not begin to take care of the increased cost of labor, fuel and supplies.

"It must not be forgotten that the rehabilitation of railroad credit is necessary, war or no war, and doubly so in the present emergency. The function performed by the railroads is most important and essential to the public welfare, and they must be put into and kept in a condition such that they can properly discharge this function. The proposed increase in rates is not and never has been in the past solely a matter of private interest, and at no time has it been a matter of more vital interest to the public than it is today."

Mr. Patterson was followed by Luther M. Walter, representing the National Shippers' Conference. Mr. Walter insisted that notwithstanding the disclaimer the appeal of the railroads for an advance in rates is based on war conditions. He contended that the commission should stay within the interpretation of the law, that it should not permit the advance to go into effect unless convinced clearly that the carriers have proved the proposed rates to be just, reasonable and not discriminatory. He also argued that the commission has no concern with the effect of the Adamson law because the law itself provides a means for ascertaining the expense which it has brought about and he argued that the carriers have used forecasts and prophecies as to the other increases in expenses. The carriers, he said, have adopted the wrong method of attempting to meet their increases in expenses because the various prices quoted are extortionate; and instead of asking the commission for an advance in rates they should join with the shippers in going to Congress and asking for protection for themselves, as well as for the public, against unreasonable prices. He suggested that the commission might send to Congress a statement which would induce it to prescribe maximum prices. He said that the roads which receive their coal supply from long distances will have to pay three times as much by reason of the increased freight rate on their own supply as they will receive for the coal they haul themselves.

Mr. Walter also referred to interlocking directorates between railroad companies and those that furnish materials and supplies, saying that men who control both railroads and steel and coal companies are trying to take an increased

toll from the people in the form of increased rates and the railroads in the form of increased prices. He said that predictions of railroad officers in previous rate cases had not been borne out and that the commission should not decide the case on the record presented, but should suspend the rates in order that it may make more careful analysis of the figures; also in order that discriminations might not be allowed to exist while the carriers are making the proposed readjustments to preserve existing relationships. He proposed that instead of trying to get an increase in rates now the carriers wait until after the war, then go to Congress and show the effect of the war and ask relief.

A. B. Hayes, representing Florida fruit and vegetable growers and Indiana limestone shippers, said that no advance should be allowed on the products of the shippers he represented and that if the carriers need increased revenue it ought not to be taken from industries that had already borne advances in the last two or three years.

A representative of the southeastern lumber shippers opposed an advance on July 1 on the ground that these shippers had suffered more from car shortage and embargoes than any other industry and that they had so many outstanding contracts on which they had been unable to ship because of shortage of cars that they would lose \$9,000,000 by reason of the increased rate if allowed to go into effect at the time proposed.

Seth Mann, representing the San Francisco Chamber of Commerce, opposed an immediate advance on the ground that a 15 per cent increase would create discriminations and said that the roads had sufficient surplus to enable them to wait until they could file complete tariffs which would not disturb existing relations.

In his closing argument, Mr. Patterson said that for some time in the past and for some time in the future questions of differentials will not be especially important. The statement that the commission should not concern itself with the Adamson law, he answered by quoting President Wilson's message to Congress of December 5, in which the President said he did not deem it necessary to renew his recommendation that Congress give explicit approval of the consideration by the commission of an increase in rates to meet the expenses because "the power of the commission to grant an increase in rates on the ground referred to is indisputably clear." Regarding the statements about interlocking directors, he pointed out that the increases in the prices of railroad supplies are less than the increases being paid by ordinary persons for all kinds of goods and that practically every shipper that has testified in the case has given similar testimony regarding his increased expenses. In reply to arguments that the railroads should meet the extraordinary increase in expense out of accumulated surplus, he said no one would suggest that a company should dispose of its investment in subsidiaries and road and equipment to meet operating expenses; that the cash on hand was necessary to meet current liabilities and that if the Pennsylvania, for instance, should sell its Southern Pacific stock now paying 7 per cent, it would decrease its income.

J. V. Norman, representing the hardwood lumber shippers, criticised the railroads' practices in all directions and declared that most of the questions that have been discussed are not matters which properly come within the commission's jurisdiction, but involve questions of public policy which are for Congress to settle. He said that the roads carrying the bulk of the traffic do not need the increase, but that if there is an emergency the commission is not the proper tribunal to determine how it shall be met. It might be better, he said, to reduce the prices of steel, fuel, etc., than to increase freight rates. He also objected to the proposal that the 15 per cent advance should be allowed to go into effect until the railroads could effect readjustments, and in regard to the statement of the southern roads that they would change the pro-

posal to an advance of 1 cent per 100 pounds on lumber, he said he had no opportunity to present evidence since the plan was changed. The railroads, he said, have given no promise of any improvement in transportation if the advance is allowed; they have said they cannot obtain more cars and locomotives from the builders if they ordered them and that they were unwilling to order them at the high prices. Many of the carriers in the south are more prosperous than they have ever been and their prosperity is increasing. If the strong roads are so concerned about the weak roads they can either increase their division of the through rates or give them more cars. If the commission would exercise the power which has been conferred upon it by the Esch-Pomerene bill and regulate car service, the railroad earnings will take care of themselves. Mr. Norman said it is absurd to say that the southern roads are confronted by an emergency; no one believes that the southern and western roads would have come into the case if the movement had not been started by the eastern roads, who are responsible for many of the difficulties of the western and southern roads because they have kept their cars.

R. Walton Moore, in making the closing arguments for the southern carriers, said that while the eastern roads had reached their maximum in both gross and net in 1916 and had since shown such a stagnation in gross and decline in net that most shippers seem to agree that they are entitled to an advance, the southern roads had not reached their maximum in gross earnings until 1916 when they were larger than in 1914. They had reached their maximum in net in 1916 due to economies and had since shown increases in gross and net until they are now beginning to suffer from the same causes as the eastern carriers by reason of the increased expenses. For April, nine of the principal carriers of the South show lower net earnings than in April, 1916. They are, therefore, beginning to recede from the prosperous condition of 1916 just as eastern carriers have done and are facing an emergency which has not progressed to such an extent as on the eastern lines, but the continuation of which is threatened. In time of war, he said, the railroads ought to be protected against any possibility of inefficiency. If the commission should discover that an advance was prematurely allowed, it should avail itself of its power to recall it. Regarding complaints by shippers that the rate relations would be disturbed by a percentage advance, he said there has never been a time when rate relationship was so unimportant. The market takes every offer it gets without regard to the route and almost without regard to price. The reasonableness of rates depends both on the value of the service and the cost of the service. The value of the traffic in many cases is increased 100, 200 and 300 per cent, while the cost of the service is increased enormously. Mr. Moore also made a point of the fact that most of the representatives of shippers who have been prominent in rate cases in previous years are not now protesting.

At the conclusion of the argument regarding the southern roads, S. Davies Warfield appeared and made an additional statement on behalf of the representatives of investors in railroad securities. He said that if the securities of the railroads were once stabilized and their credit assured, the result would ultimately be a reduction in rates because the carriers would then be able to raise capital necessary to perform the service with the greatest efficiency. He said the railroads, in asking for the advance, had exercised their right of self-preservation and were asking for an increase less than the increase in expenses with which they are confronted and that it is in the interest of all business enterprises that their request should be granted.

The argument for the western roads was made by Charles Donnelly, assistant to general counsel of the Northern Pacific, who said in part:

"The western carriers base their request for a prompt ad-

vance in their freight rates upon the ground that increases in wages and in taxes and in the prices of fuel and railway supplies have given rise to an emergency. The testimony abundantly supports their contention. It is shown that of 20 of the leading carriers in the western district operating 110,000 out of 140,000 miles of railroad the net income, which in the calendar year 1916 amounted to \$403,000,000, would have been reduced to \$277,000,000 if those roads had been operated in that year under the conditions as to wages, fuel prices and material prices which now prevail or which within a few weeks must be met. It is not an extravagance to say that if they are not allowed to increase their freight rates, as proposed, several of the important railway systems of the west, whose records as consistent dividend payers go back over a long period of years, will be obliged to reduce, if not to pass, their dividends.

"While it is true that the net operating revenues of the western lines during the first four months of the present calendar year have not declined as rapidly as have those of the eastern carriers, this is explained by the fact that because of the protection afforded by contracts shortly to expire, the western carriers have not felt to the same extent as have the carriers of the east the burden of the higher prices. Upon the expiration of contracts now outstanding new ones must be made on the basis of prices now prevailing; and to refer only to a single item, the carriers receiving their fuel supply from the head of the lakes must pay for it at prices exceeding by probably 100 per cent the prices at which they are now being supplied.

"Our opponents insist that even if the net revenues were to be reduced to the point where they would be inadequate to meet fixed charges and present dividend requirements there is in the accumulated surplus a fund which may be resorted to. A surplus of any considerable size is possessed by only a few of the carriers and, where possessed, it is for the most part re-invested in property and is not available for distribution among stockholders. So far as it exists in the form of cash it is not more than is needed for working capital.

"It is a cardinal principle of rate-making that the value of the service, as well as the cost of the service, is to be considered in determining what the freight rate shall be. Viewed from this standpoint also the increases are justified. The commodities which the carriers are now moving have increased in value from 50 per cent to 200 per cent since the freight rates on which they move were established. Such traffic can easily pay the increase proposed and this is generally recognized by those who must pay it. The sentiments of shippers regarding the proposed advance, as evidenced by hundreds of petitions addressed to the commission, is overwhelmingly in favor of it.

"The great need of the time, accentuated as it is by the crisis upon which we are entering, is for increased transportation efficiency. This demand cannot be met, nor can present efficiency be maintained, if the transportation industry is denied the right possessed and exercised by all other forms of industry of meeting increased expenses by increased charges."

Mr. Donnelly added that he was free to concede that some of the complaints regarding hardships that would be caused by the full percentage advance were justified, but he called attention to the fact that the great majority of shippers are in favor of, or at least are not protesting against, the advance. Commissioner McChord remarked that this was on the supposition that it would result in better service. Mr. Donnelly said that better service can only be realized in the event that the carriers do obtain an increase and that while the increased revenue would be required to meet expenses, it could not help having a favorable effect on the railroads' credit, which would enable them to improve their service. Mr. Donnelly said he did not claim that the present returns

of the railways constitute an emergency, but that they were facing a condition which will become serious unless granted relief.

C. B. Aitchison presented the argument on behalf of the Pacific lumber manufacturers, opposing a horizontal percentage advance and saying that the transcontinental lines are sufficiently prosperous to stand the increase in their expenses.

W. E. Lamb, representing California citrus fruit growers, also opposed a horizontal advance and said that the orange growers cannot pass it on to the consumer because their prices are fixed by supply and demand.

Clifford Thorne referred to Mr. Donnelly's remarks about the sentiment of the shippers generally for an advance, insisting that it was manufactured sentiment. He said that ten men had called on one shipper in Waterloo, Ia., to try to induce him to favor an advance and that western roads were threatening shippers with shortage of car supply unless they favor the advance. He declared that the railroads have shown no emergency, that 27 roads, handling two-thirds of the traffic of the country, have a surplus of a billion dollars, after having paid reasonable dividends, set aside for a rainy day and that they have an excess of current assets over current liabilities amounting to \$100,000,000. He said the expense caused by the Adamson law would amount to less than 2 per cent of the revenues and that the amount of increased cost of supplies is in dispute because the railroads have exaggerated it. He figured that for two roads the increase was only 29 per cent instead of about 42 per cent as claimed by the roads. He predicted that the railroads would have larger net earnings this year than any previous year except 1916, and that they had made no allowance for the economies to be brought about by the Railroads' War Board or for the increase in gross earnings to be expected. He suggested that it would be fitting for the commission to recommend to Congress that the prices of railroad supplies be regulated during the war and that the railroads had taken the unfavorable returns of February in an effort to stampee the commission. He said the railroad presidents rally 'round the flag with the battle cry "give us some more money," whereas they should content themselves with the profits of former years.

He was followed by J. H. Henderson, counsel of the Iowa Railroad Commission.

Benjamin C. Marsh, secretary of the Committee on Valuation of Railroads, told the commission it should not allow the advance in rates until after it has completed the valuation of railroad property. Commissioner Daniels asked whether the commission also ought to wait for the valuation before reducing a rate. To this Mr. Marsh replied that it could reduce the rate in accordance with the evidence submitted at the time and then reduce it some more after the valuation is completed.

Mr. Donnelly made the closing argument for the western roads, replying to some of the assertions made by Mr. Thorne. Replying to Mr. Thorne's aspersions on the patriotism of the railroads he said he thought the railroad men were as patriotic and disinterested as Mr. Thorne's clients, whose patriotism permits them to advance prices on necessities of life by 100 per cent while opposing an increase of 15 per cent in the railroads' prices.

The record accumulated at the hearings on the proposed rate advance amounts to nearly 6,000 pages and approximately 1,000 pages of exhibits.

The Investors' Protective Association of America, of which Nathan L. Amster is president, has addressed a letter to the Interstate Commerce Commission urging it to grant the application of the railroads for a 15 per cent advance in freight rates. After reviewing the rapid rise in operating costs since the end of 1916, the association says:

"Why, in view of these well known facts, the railroads

have not already clearly and fairly proved their case, and why they should still be continued on the gridiron to furnish additional evidence of their necessities, is not easy to understand. It would almost seem that some interests would prefer that the large army of American citizens, whose savings have built and operated the railroads of this country, should be dealt with on a different plane than the rest of our citizens, which is admittedly un-American and against public interest.

"It is strikingly strange that some of the interests that are opposing a 15 per cent increase to railroads are among the industries that are today receiving 50 per cent to 200 per cent more for their products than they were receiving a year ago. It is an impressive example of human selfishness that they should be unwilling to permit the carriers (through whose investments and service they have been enabled to make these abnormal profits) to share even to a small degree in the great industrial prosperity that has overtaken this country by reason of the world war. We are convinced that this effort to prevent the railroads from getting a 15 per cent rate increase to offset only a part of the unavoidable increased cost of operation is most unfair and will not meet with public approval.

THE BALTIMORE & OHIO INSTALLS AUTO TRUCK SCALES

The Baltimore & Ohio has recently installed scales of a new design for the weighing of automobile trucks at New York City, Chicago, Ill., Cincinnati, Ohio, and Olney, Ill. The scale is of improved design and heavy construction and has a capacity of 40,000 lb. It is of the two-section track scale type, having a pit suspension platform 9 ft. wide by 22 ft. long with the distance from the edge of the platform to the steelyard rod of 4 ft. The platform overhangs the centers of the supporting knife edges $13\frac{1}{2}$ in. on the sides, and at the ends does not project beyond the center of the knife edge of the end main levers.

In view of the concentration of about 80 per cent of the loads of auto trucks on the rear axle, it was necessary to so design the scale that trucks weighing 40,000 lb. could be weighed. With this in mind each corner or main lever was

Stresses in shear and torsion:

Material:	Lb. per sq. in.
Cast iron	2,500
Cast steel	6,000
Structural steel	7,000

Stresses of simple tension and compression:

Material:	Tension	Compression
Cast iron	Not to be used	8,000
Cast steel	8,000	8,000
Wrought iron	8,000	8,000
Maximum deflection, cast iron .....		.04 in.
Maximum deflection, cast steel .....		.08 in.

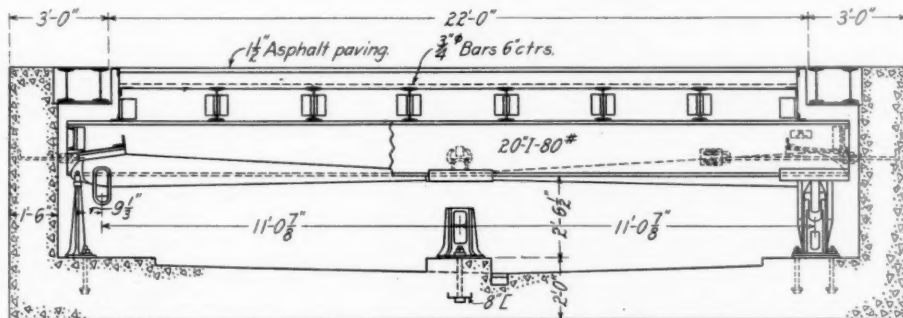
The load per linear inch of contact between the knife edges and bearings will not exceed 4,000 lb., nor will the contact exceed 8 in.

The scale is set directly on concrete. All timber has been

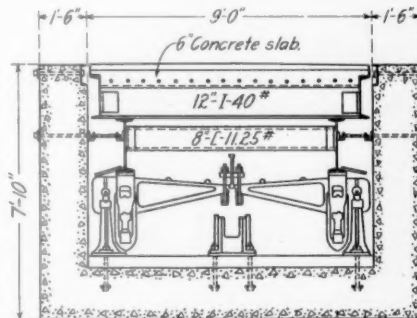


A View of the Platform Before the Deck Was Placed

eliminated and a concrete and metal coping provided. Access to the pit is through a metal manhole. The platform frame is of steel and supports the reinforced concrete deck, the top of which is finished with $1\frac{1}{2}$ in. of asphalt. The detailed construction is shown in the plan of installation. Since the end of the platform is centered over the main levers, it was desirable to prevent the dirt which falls between the end of the platform and the coping from accumulating on the levers and bearings, and to prevent this, steel diaphragms



Longitudinal Section.



Transverse Section.

Details of the Scale and Foundation

designed to support a load of 60 per cent of the capacity, the end extension levers 95 per cent, and transverse extension levers 100 per cent. The weight of the platform was also considered in establishing the stresses in the parts of the scale in addition to the loading provided for above.

The following working stresses per square inch of material which include an allowance for impact, limits of deflection and bearing per linear inch of knife edge were specified:

Material:	Lb. per sq. in.	
	Tension	Compression
Cast iron	2,500	5,000
Wrought iron	8,000	8,000
Structural steel	10,000	10,000
Cast steel	8,000	8,000

have been inserted between the longitudinal I-beams. The butts of the main levers are also protected from dirt by shields.

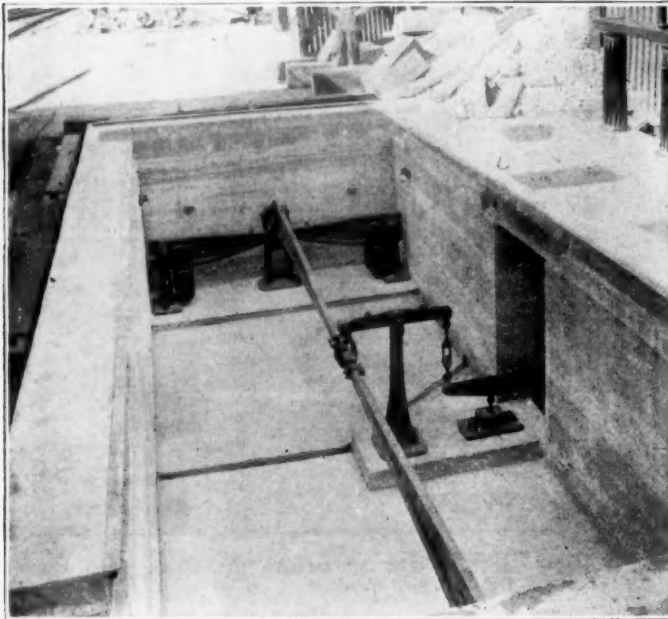
In order to allow for the concentration of the load which may occur on any one longitudinal I-beam when a truck does not run along the exact center line of the platform, each I-beam was designed to have a total section modulus expressed as follows:

$$\text{Section modulus} = \frac{0.60 \times 32,000}{4 \times 10,000} = L = .48 L \text{ where } L$$

is the distance in inches between bearings, lengthwise with the platform, and to meet these requirements 20-in., 80-lb.

I-beams were used. The flooring of the platform was designed to support a concentrated load on one wheel of 16,000 lb., corresponding to a rear axle load of 32,000 lb., and of sufficient strength to support and distribute this load to the stringers of the scale.

The scale is of the suspension platform type. The levers have been provided with leveling lugs and the nose-irons with guides, so that when adjustments are made the knife edges will be held parallel to their original position. The



The Pit and Scale Levers

nose-irons have also been fitted with non-corrosive adjusting screws.

No point or "button" bearings are used in the scale. Anti-friction plates have been provided throughout to prevent relative lengthwise displacement between knife edges and bearings and to prevent friction between the working parts of bearings. The scale is provided with a full capacity single beam with ball bearing poise, which is supported by metal columns and a one-piece beam stand.

We are indebted for the above information to L. D. Davis, supervisor of scales and weighing on the Baltimore & Ohio.

TRAFFIC LEAGUE ORGANIZES FOR TRANSPORTATION EFFICIENCY

In compliance with the resolution passed at the special meeting of the National Industrial Traffic League held at Washington on May 25, a central committee and 23 subsidiary committees have been created for the purpose of co-operating with the American Railway Association in bringing about the greatest possible transportation efficiency during the period of the war. These committees will expedite as far as possible the movement of all equipment and work to the end that traffic essential to the success of the Government and its allies in the war be given preference over less important freight.

The following central committee has been appointed: G. M. Freer, president of the League, and manager of the traffic department of the Cincinnati (Ohio) Chamber of Commerce; W. H. Chandler, vice-president of the League, and manager of the transportation department of the Boston (Mass.) Chamber of Commerce; O. F. Bell, secretary-treasurer of the League, and traffic manager of the Crane Co., Chicago; H. C. Barlow, chairman of the executive committee

of the League, and traffic director of the Chicago Association of Commerce; J. C. Lincoln, manager of the traffic bureau of the Merchants' Association of New York; J. M. Belleville, general freight agent of the Pittsburgh Plate Glass Co.; H. G. Wilson, traffic commissioner of the Toledo (Ohio) Commerce Club; H. W. B. Glover, traffic manager of the Southern Cotton Oil Company, Richmond, Va.; F. H. Frederick, railroad department, Swift & Co., Chicago; W. P. Trickett, traffic director Minneapolis (Minn.) Traffic Association; R. D. Sangster, transportation commissioner, Commercial Club of Kansas City, Kansas City, Mo.

In the circular to members of the League announcing the appointment of the committee President Freer says:

"Because of the importance of having a central committee which can be assembled at Washington on short notice, it was not possible to make this committee as representative, territorially, as would otherwise have been desirable, but as the committee includes the present officers, the chairman of the executive committee and the three ex-presidents, in all of whom the members of the League have shown their confidence, they may feel assured that the committee will endeavor to represent properly all interests and all sections of the country.

"A list is attached showing the 23 points at which the American Railway Association has established local committees, and, by the resolution adopted at the special meeting of the League, the president was directed to appoint a similar number of regional committees. However, since it is earnestly desired that all members of the League take an interest in this movement, and, since the territory to be covered by our regional committees will be broader than the districts covered by the railway local committees, the president has named only the chairmen of the League's regional committees and desires that all members promptly communicate with the assistant secretary indicating to which one of these regional committees they wish to be assigned."

The regional chairmen of the 23 subcommittees are as follows:

- H. T. Moore, traffic manager, Atlanta Freight Bureau, Atlanta, Ga.
- F. E. Williamson, traffic commissioner, Buffalo Chamber of Commerce, Buffalo, N. Y.
- F. B. Montgomery, manager traffic department, International Harvester Company of America, Chicago, Ill.
- D. F. Hurd, traffic commissioner, Cleveland Chamber of Commerce, Cleveland, Ohio.
- H. M. Freer, traffic manager, The Fleischmann Company, Cincinnati, Ohio.
- J. G. Young, traffic manager, The Columbus Chamber of Commerce, Columbus, Ohio.
- John McNally, traffic commissioner, Detroit Board of Commerce, Detroit, Mich.
- H. H. Haines, traffic manager, Galveston Commercial Association, Galveston, Texas.
- R. D. Sangster, transportation commissioner, The Chamber of Commerce, Kansas City, Mo.
- Jas. S. Davant, commissioner, Memphis Freight Bureau, Memphis, Tenn.
- W. P. Trickett, general manager, Minneapolis Traffic Association, Minneapolis, Minn.
- L. Nicolson, general manager, New Orleans Joint Traffic Bureau, New Orleans, La.
- J. C. Lincoln, manager, Traffic Bureau, Merchants' Association of New York, New York, N. Y.
- W. A. Cox, traffic manager, Chamber of Commerce of Norfolk, Inc., Norfolk, Va.
- W. J. Evans, secretary, Peoria Association of Commerce, Peoria, Ill.
- D. O. Moore, traffic manager, Chamber of Commerce of Pittsburgh, Pittsburgh, Pa.
- E. S. Goodman, traffic manager, The Richmond Chamber of Commerce, Richmond, Va.
- P. W. Coyle, traffic commissioner, St. Louis Chamber of Commerce, St. Louis, Mo.
- Seth Mann, manager Traffic Bureau, San Francisco Chamber of Commerce, San Francisco, Cal.
- S. J. Wettrick, attorney and manager, Transportation Bureau of the New Seattle Chamber of Commerce, Seattle, Wash.
- C. W. Eggers, general traffic manager, The Willys-Overland Company, Toledo, Ohio.
- Wm. H. Higgins, traffic manager, Wheeling Steel & Iron Company, Wheeling, W. Va.

DANISH RAILWAYS' TRAFFIC DECREASE.—Since April 23 the traffic on the Danish railways has decreased 41 per cent on account of the coal shortage.

Pennsylvania Locomotive of the Decapod Type

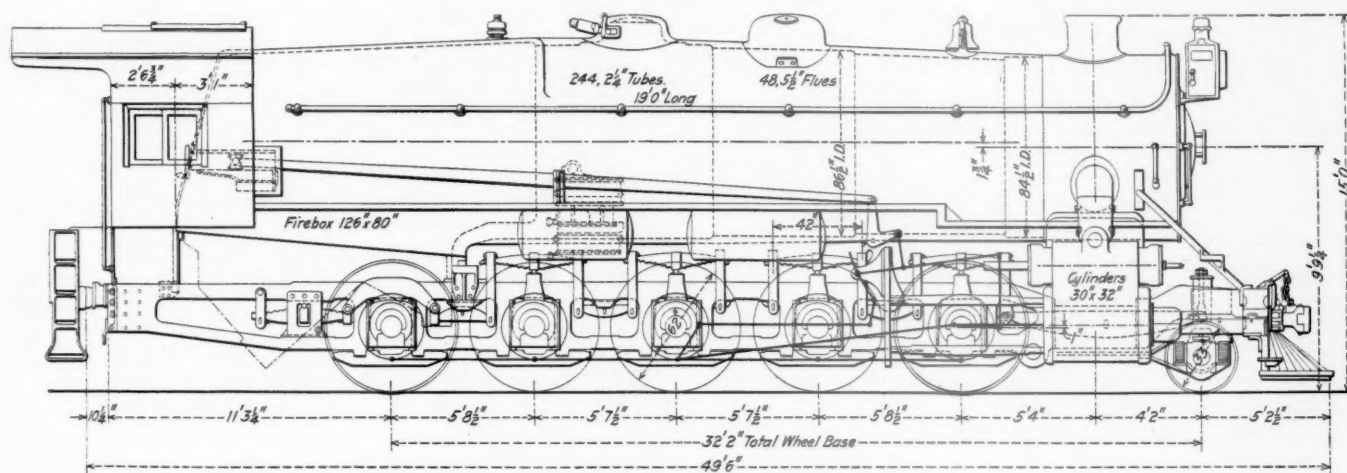
Tractive Effort 80,640 lb. at 7 M. P. H. With Maximum Cut-Off of 50 Per Cent; Boiler Pressure 250 lb.

IN December, 1916, the Pennsylvania Railroad built at its Juniata shops a Decapod locomotive having a total weight of 366,500 lb., a weight on drivers of 334,500 lb. and a tractive effort of 80,640 lb. The locomotive is the first of its type to be placed in service on the Pennsylvania and is known in the company's classification as class I-1-s.

There are several unique features in the design which represent wide departures from customary practice in loco-

of the article, that there is little difference in the capacity of the two boilers, the evaporative heating surface being increased in the new design by an increase in the number of tubes of seven, and an increase of eight in the number of superheater flues.

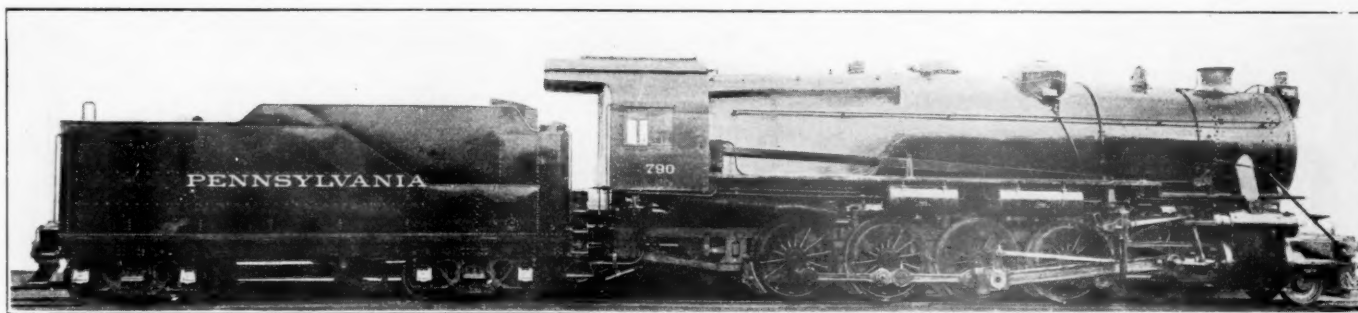
The barrel of the boiler has a minimum internal diameter of 82 in. and is made of $1\frac{1}{4}$ -in. plate, $1\frac{1}{2}$ -in. rivets in $1\frac{9}{16}$ -in. holes being used in the longitudinal joints. Like the Mikado boiler, the main barrel course is made in two



Elevation of the Pennsylvania 2-10-0 Type Locomotive

motive engineering. Instead of operating at a maximum cut-off of approximately 90 per cent, the valves have been given a steam lap of two inches and the maximum cut-off with the reverse gear in the corner is 50 per cent. In order to secure a maximum tractive effort in proper relation to the weight on drivers, this necessitates the use of much larger cylinders than are required where 90 per cent cut-off can be obtained. The cylinders are 30 in. in diameter by 32-in.

halves which are joined on the horizontal center line. The shoulders peculiar to the Belpaire type boiler are flanged integral with the upper half, and the rear end of the lower half is flanged to form the throat sheet. A one-piece pressed dome is mounted on this course. The boiler is fitted with a Schmidt superheater of 48 units placed in $5\frac{3}{8}$ -in. flues. There are two hundred and forty-four $2\frac{1}{4}$ -in. tubes, the length between the tube sheets being 19 ft. The firebox in-



Pennsylvania 2-10-0 Type Locomotive; Maximum Cut-Off 50 Per Cent

stroke and owing to clearance limitations which prohibit a further increase in the diameter of the cylinders, the boiler pressure was fixed at 250 lb. per sq. in.

With the notable exemption of the high boiler pressure, the Decapod type boiler is of the same general design as that of the class L-1-s Mikados, a large number of which are now in service on the Pennsylvania Railroad.* While there are differences in details, it will be noted by a comparison of the data for the two types given in the table at the end

cludes a combustion chamber 3 ft. long and is equipped with a firebrick arch carried on four tubes. In order to avoid joints as far as possible, the bottom of the combustion chamber and the inside throat are flanged in one piece.

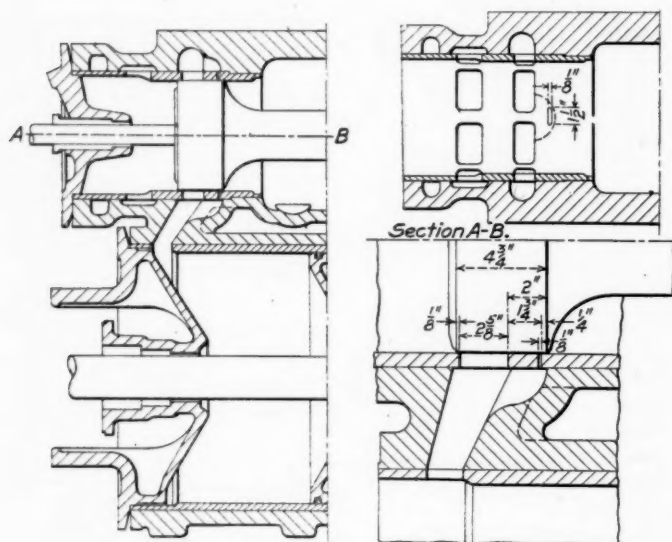
The smokebox design is generally similar to that of the Mikado type locomotive. The exhaust pipe stands about 21 in. above the bottom of the smokebox and is fitted with a circular nozzle having four internal projections. The ring blower, however, has been removed from the nozzle tip and placed at the choke of the lift pipe, which is 17 in. in diame-

* See the Railway Age Gazette July 3, 1914, page 12.

ter. This arrangement is effected by the use of a combined blower ring and lift pipe bell casting.

Each of the frames is a single steel casting 44 ft. 8¼ in. long with a driver brake shaft bearing cast integral. The top rail is 7 in. wide by 8 in. deep, the section changing to a width of 9½ in. and a depth of 7½ in. over the jaws; the lower rail is 6 in. deep. The single rail section to which the cylinders are attached is 5½ in. wide by 20 in. deep.

Steam is supplied to the cylinders through an 8½-in. dry



Details of the Auxiliary Starting Port

pipe and 6-in. branch pipes. The distribution is controlled by 12-in. piston valves and Walschaert valve gear. The arrangement does not differ from the usual Pennsylvania practice except in the increased steam lap which limits the maximum cut-off to 50 per cent.

The use of a 2-in. steam lap necessitates some auxiliary means of admitting steam to the cylinders when the locomotive is standing in order that it may be started from any position of the crank pins. The method by which this difficulty was overcome is extremely simple. Pockets about 1¼

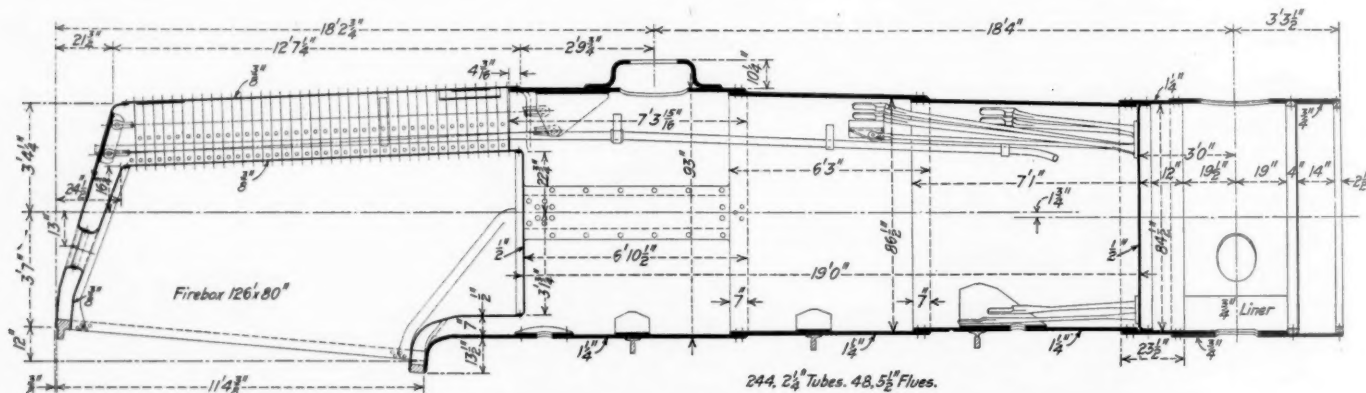
of the cylinders is excessive, thereby making possible an increase in the ratio of cylinder power to boiler capacity. By referring to the ratios of the two classes it will be seen that with but slightly increased boiler capacity an actual tractive effort at 7.2 miles per hour of 80,640 lb. is obtained from the class I-1-s locomotive as compared with a calculated maximum tractive effort of 57,850 lb. for the Mikado type. This is further reflected in the ratio of tractive effort times diameter of drivers to equivalent heating surface. As an indication of the extent to which this increased ratio is justified, it has been found that the tractive effort at 25 miles an hour is 44,400 lb. or about 55 per cent of the tractive effort at seven miles an hour.

The design of the running gear and reciprocating parts follows very closely that of the Mikado type locomotives. The piston is of rolled steel and is carried on an extension piston rod. The piston rod, driving axles, crank pins, wrist pins and knuckle pins are all of hollow sections and are heat treated.

The driving wheels are 62 in. in diameter. The front and rear tires are flanged and are 5½ in. wide. The intermediate tires are all flangeless, those of the main wheels being 8½ in. wide, while those of the second and fourth wheels are 7½ in. wide. The locomotive is designed to operate on tracks having a minimum radius of curvature of 350 ft. In the connection between the engine and tender, the old style double safety bars with slotted holes have been replaced with a single safety bar which is of the same cross section as the drawbar and ½ in. longer. It is placed immediately under the drawbar, being connected to the engine and tender by the drawbar pins.

In the following table the principal dimensions and data for the Decapod type locomotive are shown in comparison with those for the class L-1-s Mikado type locomotive:

General Data		
	Decapod Class I-1-s	Mikado Class L-1-s
Gage	4 ft. 8½ in.	4 ft. 8½ in.
Service	Freight	Freight
Fuel	Bit. coal	Bit. coal
Tractive effort (actual at 7 m. p. h.)	80,640 lb. (calculated)	57,850 lb.
Weight in working order	366,500 lb.	315,000 lb.
Weight on drivers	334,500 lb.	236,000 lb.
Weight on leading truck	32,000 lb.	27,000 lb.
Weight on trailing truck		52,000 lb.
Weight of engine and tender in working order	547,000 lb.	473,000 lb.



Boiler for the Decapod Locomotive, Which Carries 250 Lb. Working Pressure

in. deep are cored out of the inside edge of each steam port in the valve chamber, two in each port. Two ports ⅛ in. wide and 1½ in. long are cut through the valve chamber bushing, opening into the pockets in the cylinder casting. This arrangement is shown clearly in one of the illustrations, from which it will be seen that the auxiliary ports are so placed that their steam lap is ¼ in. These ports serve merely to move the engine until the main ports are opened.

The purpose of the use of the 50 per cent cut-off is to eliminate the range of cut-offs within which the water rate

Wheel base, driving	22 ft. 8 in.	17 ft. 0½ in.
Wheel base, total	32 ft. 2 in.	36 ft. 5½ in.
Wheel base, engine and tender	73 ft. ½ in.	72 ft. 3 in.

Ratios		
Weight on drivers ÷ tractive effort	4.1	4.1
Total weight ÷ tractive effort	4.5	5.4
Tractive effort × diam. drivers ÷ equivalent heating surface*	846.1	622.0
Equivalent heating surface* ÷ grate area	84.4	82.4
Firebox heating surface ÷ equivalent heating surface,* per cent	4.6	5.1
Weight on drivers ÷ equivalent heating surface*	56.6	40.9

Total weight ÷ equivalent heating surface*	62.0	54.6
Volume equivalent cylinders with 90 per cent max. cutoff	21.4 cu. ft.	19.9 cu. ft.
Equivalent heating surface* ÷ vol. equivalent cylinders	276.3	290.0
Grate area ÷ vol. equivalent cylinders	3.3	3.5
<i>Cylinders</i>		
Kind	Simple	Simple
Diameter and stroke	30 in. by 32 in.	27 in. by 30 in.
<i>Valves</i>		
Kind	Piston	Piston
Diameter	12 in.	12 in.
Greatest travel	6 in.	6 in.
Steam lap	2 in.	¾ in.
<i>Wheels</i>		
Driving, diameter over tires	62 in.	62 in.
Driving, thickness of tires	.....	3½ in.
Driving journals, main, diameter and length	12 in. by 16 in.	11 in. by 15 in.
Driving journals, others, diameter and length	11 in. by 16 in.	.....
Engine truck wheels, diameter	33 in.	33 in.
Engine truck, journals	6½ in. by 12 in.	6½ in. by 12 in.
Trailing truck wheels, diameter	.....	50 in.
<i>Boiler</i>		
Style	Belpaire	Belpaire
Working pressure	250 lb. per sq. in.	205 lb. per sq. in.
Outside diameter of first ring	84½ in.	78½ in.
Firebox, length and width	126 in. by 80 in.	126 in. by 80 in.
Firebox plates, thickness	¾ in.	¾ in. and 5/16 in.
Firebox, water space	5 in.	5 in.
Tubes, number and outside diameter	244—2¼ in.	237—2¼ in.
Flues, number and outside diameter	48—5½ in.	40—5½ in.
Tubes and flues, length	19 ft.	19 ft.
Heating surface, tubes and flues	4,043 sq. ft.	3,747 sq. ft.
Heating surface, firebox	272 sq. ft.	288 sq. ft.
Heating surface, total	4,315 sq. ft.	4,035 sq. ft.
Superheater heating surface	1,060 sq. ft.	1,159 sq. ft.
Equivalent heating surface*	5,909 sq. ft.	5,766 sq. ft.
Grate area	70 sq. ft.	70 sq. ft.
<i>Tender</i>		
Tank	Water bottom	Water bottom
Weight	182,000 lb.	158,000 lb.
Wheels, diameter	33 in.	36 in.
Journals, diameter and length	6 in. by 11 in.	5½ in. by 10 in.
Water capacity	9,000 gal.	7,000 gal.
Coal capacity	17½ tons	12½ tons

* Equivalent heating surface = total exaporative heating surface ÷ 1.5 times the superheating surface.

WASHINGTON CORRESPONDENCE

WASHINGTON, D. C., June 12, 1917.

PRIORITY BILL

The Senate has occupied most of its time during the past few days in debate on the priority bill introduced at the request of the President to authorize the President through some agency to be appointed by him, to determine what kinds of traffic or what particular shipments shall be given preference or priority in transportation during the war. The bill encountered considerable opposition on the part of those who are opposed to increasing the powers of the President and some who thought that the power would be exercised by the railroads, while a number of Senators objected that the bill provides for compensating the railroads for any damage they may suffer by disarrangement of their traffic while leaving the shipper unprotected for any damage he may suffer because of other shipments being preferred.

Senator Hollis of New Hampshire at first objected because he thought the provision in the bill prohibiting obstruction of interstate commerce might be construed as an attempt to prohibit strikes, but after Senator Newlands had accepted an amendment designed to remove this objection he was a strong advocate of the passage of the bill.

Senator Newlands, in charge of the bill as chairman of the Committee on Interstate Commerce, began his efforts to secure favorable consideration by placing in the record material describing the creation and organization of the Council of National Defense and its Advisory Commission and sub-committees and co-operative committees, of which the American Railway Association's Special Committee on National Defense is one. For the purpose of clearing up misunderstandings which have led to so much opposition in Congress to the work of the Council and its committees, he inserted in the record a full list of these committees, a letter from Daniel Willard, chairman of the Advisory Commis-

sion, explaining the need for the priority legislation, copy of a speech by Howard Elliott explaining the work of the railroads' War Board, and an article by W. M. Acworth, published in The Outlook, explaining the methods by which railroads have been operated in England during the war.

Mr. Willard's letter also explained the difference between the plans for the operation of the railroads adopted in this country and England, showing that where in England the government took over the railroads and appointed a committee of railway officers to operate them, at the same time guaranteeing the earnings, in this country the railroads voluntarily selected a committee for the purpose of accomplishing the same result as was brought about in England, but without any guarantee whatever concerning the future income. One of the most important functions of the railroad executive committee, he said, is to procure prompt and adequate transportation of those commodities essential to the welfare and defense of the nation and, although they have no authority under the law to give preferential treatment to shipments of one kind over another, it is so clearly in the public interest that certain matters should be given priority that the committee has so far not hesitated to take action when it seemed necessary or desirable to do so, as in the case of coal. But as time goes on the amount of freight offered will be greater than it is at present and there ought to be provided by law a small commission of not less than three men or more than five to consider and pass upon questions concerning priority. The railroads are now handling a greater volume of business than was ever handled at any previous time and as there is more business to be handled than the railroads are able to accommodate it becomes necessary to decide what particular character of shipments shall be given priority in the public interest although it is not at all necessary from the standpoint of the railroads.

Senator Hollis said he was especially anxious to have the cause of his objection removed because he was anxious to vote for the bill. He had come to the conclusion that it is entirely proper in case a railroad is directed to carry freight that is not remunerative when more remunerative freight is offered that it should be paid for whatever loss it suffers. He said the provision in the bill that in certain cases the administration may require a division of earnings between railroads is to cover cases where one railroad may be required to handle an unusual number of empty cars, while the freight is being carried by another road. The only thing the railroads have to sell is transportation and if their right to earn a fair amount for transporting freight and passengers is taken away their profit is actually being taken without compensation. In reply to an objection by Senator Brandegee that the bill provided no protection for shippers, Senator Hollis said that it would not be good policy for the government to try to provide for all the speculative damages which might be claimed by shippers.

Senator Cummins, who, with Senator Newlands, constitutes the sub-committee that presented the bill, pointed out that it is necessary either to give the President the contemplated power or some equivalent power to take possession of the railroads if the war is to be carried on successfully and that the committee had taken the view that it was better to give the President power to determine priority than to attempt to take possession of the roads. Senator Smith of Georgia admitted that there is a condition which perhaps requires some legislation but not one that justifies "practically despotism" and he was opposed to giving the President such great power. He said he would not object if the power were limited strictly to war supplies.

Senator Reed of Missouri thought that the purpose of the bill was to give the railroad committee the power proposed. To this Mr. Hollis replied that he had talked with members of the railroad executive committee who had told him they thought it would be very undesirable to have the power to

determine priority placed in the hands of the railroads and that such questions should be decided by the government. Senator Robinson of Arkansas also said that the railroads did not desire to exercise the power, that its purpose was to enable the President of the United States to see that before automobiles shall be shipped railroads shall carry cannon and rifles and soldiers. Senator Newlands pointed out that the bill also applied to all the elements of production that form a part of the munitions of war. Senator Smith thought that at least the men who are to perform this duty for the President should be determined by Congress.

On June 9 Senator Newlands made an elaborate statement emphasizing the necessity for the passage of the bill and explaining the work of the Railroads' War Board. He said that the railway executives had proposed that the power to determine priority be given to the Interstate Commerce Commission, but that the committee had felt that the function of the Interstate Commerce Commission was to secure equal rights to all, as a quasi-judicial body, and that it should not be called upon to exercise the emergency powers made necessary by the state of war. They thought that the powers belonged to the President as commander in chief of the army and the navy and that he should choose whatever agency he thinks best meets the requirements of the hour.

On June 11 Senator Smith introduced an amendment providing that in case a shipper is damaged by reason of freeing the carrier, in consequence of compliance with a priority order, from liability under existing law, the Interstate Commerce Commission shall, upon application by the shipper and upon notice to the attorney general and after due hearing, determine the amount of such damage, to be paid by the Secretary of the Treasury. He also proposed a substitute providing for the appointment of a transportation priority board of five members to be appointed by the President, with the advice and consent of the Senate, to investigate problems of transportation during the war, unless terminated by act of Congress or order of the President, and to direct that certain traffic shall have priority or preference when required by the national defense or public welfare.

Senator Norris of Nebraska also introduced an amendment to give to any person or corporation the same right which the bill proposed to give to a carrier, in case damage has resulted on account of the orders by the President. Senator Kellogg of Minnesota said that under this amendment the government would become the guarantor of a sufficient transportation during the war and that every shipper in the United States could get damages out of the Treasury by reason of delays on account of the necessity of transporting munitions of war. Senator Norris said that unless such a guarantee were given to the shippers it should not be given to the railroads. Senator Pomerene of Ohio said that if an attempt were made to compensate those shippers whose merchandise was in course of transportation at the time a preferential order was made he believed he would support it, but that the President would not take hold of the manufacturing plant or the business establishment of the shipper to the same extent that he would take possession of the railroads. Senator Cummins said that the reasons for giving the railway companies damages for injury they may suffer does not grow out of any tenderness or favoritism to the railroads but out of a disinclination to allow the railway companies to recoup their losses by increased rates to be paid by the shippers instead of by the general public.

"We do not need men more than we need adequate facilities for transporting the products of the country from one part of it to another," he said, "and if the revenues of the railroads are so depleted by the war that the lines can no longer answer their functions, we shall suffer a disaster only second to the disaster which would follow the inadequacy of our troops."

PROPOSED PURCHASE OF CARS BY THE GOVERNMENT

The suggestion that the government purchase a large number of freight cars to be used by the railways is receiving considerable attention in Washington. The co-operative Committee on Cars of the Advisory Commission of the Council of National Defense, of which S. M. Vaulain, vice-president of the Baldwin Locomotive Works is chairman, has submitted a report advocating the purchase by the government of 100,000 gondolas and 50,000 box cars. This proposition has been under consideration by the Executive Committee of the Special Committee on National Defense, which has issued a statement that the railways would welcome any assistance the government might render in making up the deficiency in their own orders, but rather indicating the opinion that additional power and terminals would be more effective. The statement points out that the average addition to the equipment of American railways has been at least 150,000 cars per annum but that under existing high prices and the inability of car builders it is unlikely that they will be able to order and secure as many as 150,000 during the next year, although they have about 100,000 cars still undelivered under order from the manufacturers. Under these conditions, it is stated, "the railways will welcome any addition to their stock of equipment, assuming the standards to be safe and adequate, which would tend to make up the deficiency in their own orders. If then, the government shall elect to invest the capital necessary for the acquisition of 50,000 to 75,000 additional cars, the railroads will be glad to make use of them on substantially the same basis as other privately-owned cars are used by the railroads, viz., a fair payment for mileage made by such cars, the railroads to pay current repairs and the government to pay owners' repairs under M. C. B. rules. It is perhaps expedient that an option should be given to the railroads to acquire these cars at a fair price to be agreed upon hereafter, in proportion to the amount of equipment owned by each of them to the entire equipment of the country."

The committee also said: "This memorandum does not discuss the merits of the question of whether the largest effective aid in the interest of the public can be given to the railroads by the provision of additional cars or, in the alternative, by provision of additional power and terminals."

Senator Hoke Smith of Georgia has been pressing in the Senate a bill to appropriate \$100,000,000 for the purchase of freight cars for the railways by the government. He talked of getting 100,000 cars for this amount and advocated the plan as a possible alternative for an advance in freight rates. Senator Smith placed in the Congressional Record recently a letter from Newman Erb, president of the Ann Arbor, suggesting that the government loan its credit to the roads for the purchase of 200,000 cars. Mr. Erb's letter is in part as follows:

"The freight car equipment of the country has very properly been placed under a unified central control, but a large number of additional freight cars should be promptly added. This can be obtained only through government agencies. The car companies of the country have for several years, and are now utilizing only a little more than 25 per cent of their normal capacity, but on account of the difficulty of obtaining the materials it is impossible, even if credit were available, to secure the material for the new cars in time for this year's service without recourse to the power of the government to obtain preferential deliveries.

"No greater service can be performed to the country, in my opinion, in the pressing circumstances than in assisting the railroads to finance a large addition to their equipment and to command preferential delivery of the materials for its construction.

"I would therefore suggest that appropriate legislation be enacted creating a credit sufficient in amount to cover the cost 200,000 freight cars of standards approved by the Interstate Commerce Commission, to be placed in interstate traffic under the direction of the American Car Service Association and the control of the Interstate Commerce Commission. The cost of the cars to be assumed by the railroad companies engaged in interstate traffic, and repaid with interest at 4 per cent per annum in 30 semi-annual payments, a lien being reserved by the government on the cars to secure such payment. The per diem earnings to be collected by the American Car Service Association, and applied:

1. To the cost of their proper maintenance.
2. The surplus to the repayment of the principal and interest.

"Any deficits shall be apportioned and collected from the interstate car-

riers in proportion which their respective total annual freight car mileage bears to the aggregate total freight car mileage of all such carriers, and for which they shall be statutorily liable.

"This involves no governmental burden. It places no appreciable burden upon the carriers, because if they do not get their proportionate use of these particular cars they receive the benefit of an enlarged use for other cars.

"The per diems paid are now properly made chargeable to operating cost, the payments made for the cars in excess of the per diem collected for their use should also be made chargeable to operating cost.

"We should have at least the 200,000 freight cars added to our equipment and completed during the present year. I believe the car companies, if provided with the material, are at present in a condition to furnish them this year."

PER DIEM RATE REDUCED

The Commission on Car Service has issued a circular No. C.S. 2 announcing a resolution adopted by the Executive Committee of the Special Committee on National Defense, "that the per diem rate of 75 cents shall remain in effect from December 15, 1916, to March 31, 1917, inclusive, and that no claim shall be allowed for that period on behalf of any railroad as to the injustice of the 75-cent rate or for other views that have been expressed," and "that the rate shall be 60 cents per car per day, effective April 1 and until September 30, 1917, when it will be subject to further adjustment on its merits."

The Commission on Car Service has received many complaints against the 75 cent-rate ever since it went into effect last winter, which have been referred to the Executive Committee. Among the complainants have been the Short Line Railroad Association of the South and many smaller roads as well as some of the larger roads that have had unusually large car hire balances to pay because they have been congested with cars. The per diem rate was increased from 45 to 75 cents on December 15, and was to have been effective until May 1. The new order therefore makes the 60-cent rate retroactive to April 1. The order of the Car Service Commission notifies all roads that adjustments shall be made forthwith between all roads on any and all payments or settlements of per diem, which have been or may be made, on the basis established by the resolution of the Executive Committee.

CARS FOR COAL AND ORE

The Commission on Car Service has also issued Order No. C. S. 3 announcing that the Executive Committee, "after continued and earnest consideration of the lake coal and ore problem, and after taking advice from all parties interested, in order to insure a sufficient supply of cars to meet the demand of the shipments of lake coal and ore, has decided that hopper or self-clearing cars of certain ownerships should be confined to that service." To accomplish this purpose it is directed that all hopper or self clearing cars belonging to the Baltimore & Ohio, Bessemer & Lake Erie, Cincinnati, Hamilton & Dayton, Erie, Hocking Valley, New York Central, Pennsylvania Lines (Pennsylvania system cars), Toledo & Ohio Central, and Wheeling & Lake Erie, which roads make deliveries of coal to lake ports, must, until further notice, when released from original load, be immediately returned empty by the most direct route to the home road.

BETTER CAR LOADING

The Department of Commerce, Bureau of Foreign and Domestic Commerce, has addressed to the 7,000 and more trade organizations of the country a circular letter urging maximum capacity loading of freight cars by users, in order to assist in reducing the car shortage and release cars for important use. Replies are now coming into the bureau showing a gratifying spirit of co-operation on the part of shippers and organizations. Attention is also being called to the importance of eliminating delays in unloading.

GOOD SHOWING FOR BITUMINOUS COAL MOVEMENT

Fairfax Harrison, chairman of the Railroad War Board, has authorized a statement that according to a report com-

piled by the government, 29 per cent more bituminous coal was hauled by the railroads of the United States in April, 1917, than in April a year ago. The exact figures for 85 railroads—the principal coal carrying roads—show that in April of this year 659,837 carloads of coal were shipped from the mines, as compared with 508,982 cars in April, 1916. The number of working days in both months were the same. The coal fields of Pennsylvania, Maryland, the Virginians, Ohio, Michigan and eastern Kentucky, originated 55,480 more carloads of bituminous coal in April of this year than in April, 1916. Illinois, Indiana, and western Kentucky shipped 76,134 more cars, while the mines of Alabama, Tennessee, Georgia, Arkansas, Iowa, Kansas, Missouri, Oklahoma, Texas and the far western states shipped 19,241 more cars than in April last year. The shipments in March, 1917, were 8.8 per cent larger than in March, 1916, with the number of working days the same each year. The Railroad War Board is taking every step possible to secure the largest movement of coal throughout the country during the summer months.

INLAND WATER TRANSPORTATION

A committee on inland water transportation has been appointed to co-operate with the Advisory Commission of the Council of National Defense and held its first meeting at Washington on June 7 for the purpose of making a study of the possibilities of developing transportation on the inland waterways of the United States and securing co-ordination between rail and water carriers. Daniel Willard, chairman of the Advisory Commission, in calling the meeting to order, called attention to the fact that the railroads are carrying more freight than ever before in the history of the country, but that when they have carried traffic up to 100 per cent of their capacity there still remains a percentage which it is impossible for them to carry at all. He said that when conditions are normal again he supposed the railroads and waterways would be competing for traffic as in the past, but that he could give assurance that so long as the war lasts the railroads will co-operate to the fullest possible extent with the waterways of the country in order that the needs of the country may be served. Walter S. Dickey, president of the Kansas City-Missouri River Navigation Company, was appointed temporary chairman of the committee and Col. Keller of the U. S. Engineer Corps, representing Brig. Gen. William M. Black, was appointed temporary secretary.

* * *

H. F. Smith, vice-president and traffic manager of the Nashville, Chattanooga & St. Louis, has addressed a letter to the Commission on Car Service protesting against what he calls discrimination against his road in the distribution of box cars. He says that the railroads in Group 5, which includes his company's lines, have a deficit of 33.9 per cent of their box car equipment and that on May 1 his company had only 50 per cent, while on May 25 it had only 41.8 per cent.

* * *

The Senate on June 8 passed the sundry civil appropriation bill, which had previously passed the House, which carries the appropriation of \$3,500,000 for the ensuing year's work of the Division of Valuation of the Interstate Commerce Commission. The bill also carries the appropriation for the expenses of the commission itself, \$50,000 for the Board of Mediation and Conciliation, and \$7,500,000 for the Alaska railroad, in addition to the \$3,000,000 recently provided by an emergency appropriation.

CUT PRICE ON CAMP LUMBER.—The millions of feet of lumber required to build cantonments for the war army is to be supplied under an agreement between the lumber industry and the Defense Council at from \$3 to \$5 a thousand below the prevailing market prices.

LONG BOX CARS FOR SPECIAL SERVICE

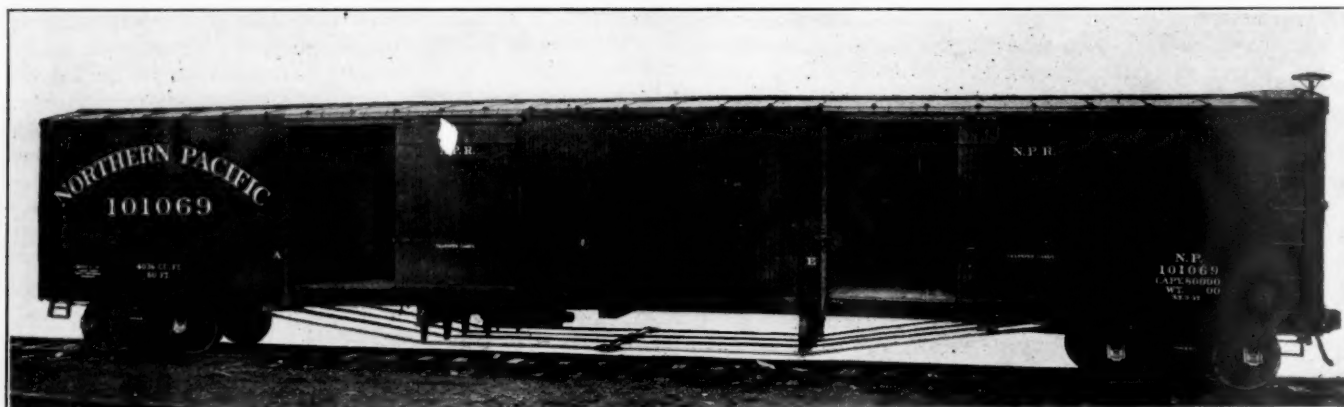
Several years ago a number of box cars of unusual length were placed in service on the Northern Pacific between St. Paul and Minneapolis and Northtown transfer. They were used for collecting less than carload shipments from team tracks, to be rehandled at Northtown transfer, where the freight is either consolidated into full car loads or loaded into local cars for distribution in specified districts. On a delivery track provided with a driveway on each side, the extra doors and the great cubical capacity of the cars makes it possible for a large number of drays quickly to discharge their loads into the car. When the car is loaded it is picked up and taken to the transfer freight house.

The cars have proved so well adapted to the special service that 35 additional cars have recently been built at the company's South Tacoma, Washington, shops for similar use between Seattle, Tacoma and Auburn on the west end of the line. These cars have a capacity of 80,000 lb. and are 60 ft. long over the end sills. In addition to the unusual length, the cars are unique in that they are provided with two doors on each side.

The cars are of wood construction throughout. The un-

GRAFT UNDER GOVERNMENT OWNERSHIP IN CHINA

A scathing editorial arraignment of the Chinese minister of communications which was published in the *Peking Gazette* of March 22, was recently received from a Peking reader of the *Railway Age Gazette*. According to the editorial in question, and the minister's own admission as published in a letter elsewhere in the same paper, one hundred and fifty 30-ton wooden covered freight cars and fifty 30-ton wooden open freight cars were rented from a Japanese firm for a period of 15 years at \$4 per day per closed car and \$3.70 per day for open cars. The *Peking Gazette* points out that the rental for each closed car for 15 years will amount to \$21,900, whereas the pre-war estimate gave the value of such a car as \$2,600. The loss to the Chinese government in hiring a car instead of buying it under normal conditions is the difference between the total rental for 15 years and the actual price of the car plus shipping charges from Japan, or roughly a loss of \$19,000 per car. This is not taking into account the interest properly chargeable on the amount paid for rent throughout the term of hire or the cost of upkeep and repair which is cast on the Chinese railway authorities, as



Long Box Cars for the Northern Pacific to Be Used for Collecting L.C.L. Freight from Team Tracks

derframe is made up of six sills, each 5-in. by 9-in. sections and the end sills of 6-in. by 10 $\frac{3}{4}$ -in. sections. There are six truss rods, all of which are provided with turnbuckles and lock strips at the center of the car. The body framing in general follows the usual practice in wood car construction. All posts are tenoned into the side sills and plates and each is provided with a $\frac{3}{4}$ -in. tie rod. The sheathing and lining are of 13/16-in. by 5 $\frac{1}{8}$ -in. tongued and grooved material. The flooring is of 1 $\frac{3}{4}$ -in. material and is also tongued and grooved. The sheathing at the bottom of the car is protected by a 9-in. by $\frac{1}{8}$ -in. plate which extends the entire length of the car on each side.

The cars are carried on arch bar trucks which are fitted with a lateral motion device. The body and truck bolsters are of cast steel with center plates and side bearings cast integral. The cars are 59 ft., 4 $\frac{7}{8}$ in. long inside and have a capacity of 4,036 cu. ft. The light weight is 43,500 lb.

SWISS CARS FOR GERMAN COAL.—The Swiss railways have for some time past been supplying Germany with cars and engines for conveying coal and iron to Switzerland. At present about 60 Swiss locomotives are running on German railway lines. Germany, of course, pays Switzerland something for their hire. As a result of this German demand for the loan of engines the Paris, Lyons & Mediterranean has also asked to be allowed to hire a number of Swiss engines, about 40 in all, for the transport of foodstuffs and other goods from Certe, France, to Switzerland.

this may be set off against the interest also chargeable on the price of the car in the event of a purchase. Hsu Shih-ying, the minister of communication, defends the contract in a lengthy explanation translated by the editor, showing an adroitness in juggling figures and giving plausible reasons for an obviously crooked transaction, which would lead one to doubt whether any other nation has produced as finished and capable grafters as the Chinese mandarin.

In the first place, he tries to shift responsibility by showing that the contract for the cars was signed by one of his subordinates and not by himself as charged previously by the editor of the *Peking Gazette*. This disclaimer of responsibility is contradicted by the *Gazette* which challenges Hsu to deny that he and the officer in the ministry of communications who generally attended to the "seamy" part of every questionable deal, negotiated the agreement with the representatives of the Japanese company interested and that the negotiations were conducted sometimes at his own private residence. The *Peking Gazette*, by way of comment, points out that during the days of Manchu corruption in China a high official generally left the question of "squeeze" to be arranged by a faithful subordinate who invariably accompanied him throughout his official career.

In connection with the minister's habit of frequently transacting the official business of his ministry at his home and keeping there important documents, the editorial suggests that it is a practice worthy of exhaustive parliamentary investigation. It says: "It is futile to disguise the fact that Hsu Shih-ying's administration of the ministry of communi-

cations is become a national scandal. Chinese and foreigners alike speak of his tenure of office in terms of reprobation applied only to public men who are guilty of gross misconduct in the administration of the revenues of the state. It is the daily talk of his Yamun that every lucrative post in the gift of the minister of communications can be bought and that no such post is ever given unless handsomely paid for; and case after case in the railway and other services under the control of the ministry is mentioned as having been the subject of shameless traffic. The directors and many of the other higher officers of every government railway line have been changed; and it is openly said that the changes have taken place because the old officers have failed to make the appropriate 'presents' to the proper quarter and the new officers have done so. Figures are mentioned ranging from a few thousand dollars to upward of fifty thousand dollars. The few honest officers in the ministry of communications, who have escaped summary dismissal at the hands of the minister of communications, say—whisperingly—that the present regime in the ministry is the worst, not excluding the classic days of the Manchus with their monumental corruption. There is hardly an official in the capital—from the highest to the lowest—who does not know and talk of this shameful state of things; and yet nothing is done—and people whose sole thought is to get-rich-quick in the belief that another political transformation may come, are suffered to rob and fatten on the revenues of the country."

In commenting on Hsu's ingenious and misleading calculations in defense of the car deal the Peking Gazette says: "We have flatly to contradict the statement that the pre-war price of either a covered freight car was \$8,000 or an open car was \$4,000 as he alleges; nor do we admit that the war price of a covered car is \$8,000 and that of an open car is \$5,000 as he also alleges. It may be that these figures are the special quotation of the precious Han Sheng Company in its dealings with Hsu Shih-ying; but it is ridiculous to state publicly that the figures mentioned are the market prices of railway cars. The most effective reply to the statement is that the ministry of communications can purchase similar cars, manufactured at Shanghai, for 3000 taels per car. And the further statement that the cost of freight from Japan—the cars, we take it, are to be shipped from that country—is \$3,000 per covered car and \$2,500 per open car, is not less false than outrageous and insulting to the intelligence of even a rickshaw coolie. But assuming that these false figures are true—to put it in the Irish way—it is clear that they are war prices; and for the purposes of Hsu Shih-ying's case, their argumentative value is obviously limited to the duration of war conditions. If he justifies the hire-agreement on the ground that both the price and freight of each car have risen to abnormal figures on account of the war, that reason can be valid only for a hire-agreement that is operative during the continuance of war conditions. But instead of so limiting the term of the agreement or providing for its termination within a reasonable period after the conclusion of the war, Hsu Shir-ying has fixed a period of rental which, we have no hesitation in saying, is entirely unprecedented in matters of the sort. We could understand an agreement limited to as many as three years; but to enter into an agreement binding on the Chinese authorities for a period of 15 years on the basis of fabulous war prices, is not on an act of 'folly'—which he disclaims in his reply—but something that suggests inferences gravely reflecting on a man's probity."

ITALY LOSES 310 FREIGHT CARS.—Officials of the Berwick plant of the American Car and Foundry Company have received word that 310 cars of a 3,000-car order being built in Berwick, Pa., for the Italian Government went down in the sinking of the Washington, which was carrying equipment to Italy. The Italian Government is contracting for the replacing of the 310 cars.

TRAIN ACCIDENTS IN APRIL¹

The following is a list of the most notable train accidents that occurred on the railways of the United States in the month of April, 1917:

Collisions						
Date	Road	Place	Kind of Accident	Kind of train	Kil'd	Inj'd
5.	N. Y. Central.....	Wayneport.	xc	P. & F.	2	1
5.	Louisville & N.....	Gallatin.	bc	P. & F.	0	14
Derailments						
Date	Road	Place	Cause of Derailment	Kind of train	Kil'd	Inj'd
2.	Boston & M.....	Greenfield.	d. track	P.	0	0
1.	Atchison, T. & S. F..	Flagstaff.	b. rail	P.	0	0
4.	Southern	Marshall.	malice	P.	0	7
18.	Penn.	Parkton.	d. track	P.	0	2
21.	Rutland	Rutland.	ms	P.	0	1
*25.	Phila. & Reading.....	Yerkes	ms	F.	1	2
Other Accidents						
Date	Road	Place	Cause of Accident	Kind of train	Kil'd	Inj'd
3.	Atchison, T. & S. F..	Gise.	boiler	F.	3	0

The trains in collision near Wayneport, N. Y., on the night of the 5th were westbound passenger train No. 7 and a freight train which was crossing from the West Shore tracks to Track No. 3, the westbound slow speed track. The baggage car, 3 coaches and 5 sleepers were derailed. The engineman of train No. 7 was killed and the fireman was injured. The dead body of a man (a trespasser) was found in the wreckage. Train No. 7 had passed a distant and a home signal set against it.

The trains in collision near Gallatin, Tenn., on the 5th were a southbound special carrying soldiers and a northbound freight. Both engines were badly damaged, and fourteen soldiers were slightly injured. The freight had encroached on the time of the special.

The train derailed at Greenfield, Mass., on the 2nd was a southbound express. The tender and seven cars ran off the rails. No person was seriously injured. The cause of the derailment was soft track.

The train derailed near Flagstaff, Ariz., on the 2nd was eastbound passenger No. 2. Three passenger cars were partly overturned. The cause of the derailment was a broken rail.

The train derailed near Marshall, N. C., on the night of the 4th was a westbound passenger. Five passengers and 2 trainmen were injured. The derailment was due to malicious removal of a rail.

The train derailed at Parkton, Md., on the 18th was an eastbound express, No. 502. Four passenger cars ran off the rails and one of them fell against freight cars on the westbound track. Two passengers were injured. The cause of the derailment was distortion of track by solar heat.

The train derailed near Rutland, Vt., on the night of the 21st was a northbound passenger. The locomotive was overturned and the fireman was injured.

The train derailed at Yerkes, Pa., on the 25th was a southbound freight. The engine and eleven cars ran into a short side track and fell down a bank. The wreck took fire and was partly burnt up. One brakeman was killed and the engineman and fireman were scalded. The derailment was due to a misplaced switch, left wrong by bridge repairers.

The train involved in the accident at Gise, N. M., on the night of the 3rd was a westbound freight; and the cause was the explosion of the boiler of the locomotive. The fireman and one brakeman were killed and the engineman was fatally injured.

¹Abbreviations and marks used in Accident List:
rc, Rear collision—bc, Butting collision—xc, Other collisions—b, Broken—d, Defective—unf, Unforeseen obstruction—unx, Unexplained—derail, Open derailing switch—ms, Misplaced switch—acc, obst., Accidental obstruction—malice, Malicious obstruction of track, etc.—boiler, Explosion of locomotive on road—fire, Cars burned while running—P. or Pass., Passenger train—F. or Ft., Freight train (including empty engines, work trains, etc.)—Asterisk, Wreck wholly or partly destroyed by fire—Dagger, One or more passengers killed.

RAILWAY SIGNAL ASSOCIATION STATED MEETING

The second stated meeting of the year was held by the Railway Signal Association in the Hotel McAlpin, New York City, on Tuesday and Wednesday of this week. A good attendance of members largely from the East participated in the discussion of a number of important details presented by various committees. At a meeting of the Board of Direction on Monday, it was determined to substitute for the regular annual convention a two-day business meeting in order to allow the completion of work under way. This meeting is to be held at the Traymore hotel, Atlantic City, N. J., on September 18 and 19.

The discussion of the report of the Harmonizing Committee occupied the entire forenoon session on Tuesday. The work being done by this committee, while detailed in nature, is very valuable and the members present showed an active interest in it. The committee hopes to complete its work on detail provisions of the specifications before the annual meeting in order that the record may not be separated in two volumes.

The Tuesday afternoon meeting was occupied with the work of four committees. The Committee on Signaling Practice presented no new matter and its brief recommendations on four subjects assigned were promptly disposed of. The Committee on Mechanical Interlocking precipitated a lengthy discussion by repeating a recommendation made at the March meeting for spacing of $2\frac{1}{2}$, 5, 5 and 5 in. between the holes drilled in switch points for attaching switch fittings. This differs from the standard practice of the A. R. E. A., and while it was urged that from an interlocking standpoint the wider spacing at the point will give a much desired increase in clearance, it was felt that action on this point should be postponed until a definite standard spacing of rods has been adopted. It was therefore voted that the committee be instructed to confer with the Committee on Track of the A. R. E. A. in regard to a drilling which could be agreed upon by the two associations.

The report of the committee on Power Interlocking included two items, both important. The revised specification for petroleum asphaltum which has been wanted by a number of roads was accepted with little comment. The requisites for installation of low voltage switch machines for outlying passing sidings brought out a considerable difference of opinion as to the degree of safety necessary or desirable in such an installation and it was finally agreed to refer the subject back to the committee in order to consider the suggestions made in the discussion.

The Committee on Direct Current Relays also touched a live topic in its statement of minimum resistance between battery and track with four-ohm and two-ohm relays. As stated by one of the committee members the exhaustive study involved in the preparation of this statement was undertaken to clear up as far as possible the advantages which have been urged for a track relay of lower resistance than the usual four-ohms, and the statement was accepted by the meeting as useful data bearing on this point.

The committee reports scheduled for Wednesday were disposed of in one session, although this did not adjourn until after 1 o'clock. The Committee on Standard Designs was first, presenting 13 new and revised drawings and a revised specification for hand lantern globes, all of which were accepted. The size of the iron relay boxes shown on drawing 1182 was the subject of considerable discussion, some of the members feeling that either more space should be allowed to accommodate the largest sizes of a. c. relays in use or the title should be modified to indicate that the housings are intended only for d. c. instruments. The opinion which finally prevailed, however, was that the sizes shown will accommodate many of the smaller types

of a. c. relays and they are not limited therefore to d. c. work, and further, that it would be unwise to increase the cost of all boxes by providing additional space that would be required only in special cases.

The committee expressed its willingness to present a design for a large box at some future date if the demand warrants it.

Referring to the ventilation of the standard iron relay case, one member expressed the opinion that it would be preferable to omit the upper opening which leads directly into the relay compartment. Another member told of very satisfactory experience with about 100 boxes of the sizes shown on the standard drawing, but made of sheet metal instead of cast iron and lined with thin wall board instead of wood.

Referring to drawing 1365, Ladders for Ground Mast Signals, the chairman of the committee called attention to the fact that he considers it good practice to provide a platform for each blade or light whether it is fixed or not, thus strengthening the ladder as well as increasing the safety for the men who have occasion to take care of any work on the apparatus. It was therefore agreed that the title should be changed from "Ladders for Ground Mast Top Mechanism Signals" to "Ladders for Ground Mast Signals." The revised specification for hand lantern globes was accepted with little discussion.

The committee on D. C. Automatic Block Signaling presented drawing 1423, Wire Connection to Rails, which brought out a wide variety of opinion. The difficulty of meeting satisfactorily all of the requirements of a rail connection have led to a great diversity in practice on various roads. The committee had considered many different systems and presented a plan which it thought would meet the wishes of many of the members. After receiving a large number of suggestions, however, the chairman of the committee agreed to take back the plan for reconsideration and presentation at a later date.

The committee on Electric Railway and A. C. Signaling presented a set of general clauses for unit specifications, a specification for impedance bonds, a specification for alternators, a specification for air cooled reactors for line and track circuits, and a specification for resistors for line and track circuits, all of which were accepted practically without discussion. The specification for single phase line transformers, oil-immersed, self-cooled, outdoor type, which was a part of this committee's report was withdrawn by the chairman in view of a number of changes that were found desirable after the matter was published.

The Special Committee on Signaling Requirements on Electric Railways presented a brief progress report which was accepted without discussion. In addition to the standing committees a verbal report was received from J. M. Waldron, signal engineer, Interborough Rapid Transit, covering the work done so far by the Conference Committee on technical subjects which is intended to co-ordinate the efforts of a number of technical organizations in the electrical field along lines in which they are mutually interested. Thus far the work has been largely preliminary in nature.

AUTOMOBILE TRUCK "BEATS UP" LOCOMOTIVE.—An automobile tried to push a locomotive off the track, according to a letter recently received by the Chisholm & Moore Mfg. Company, Cleveland, from the superintendent of the Pennsylvania Railroad to the effect that "on Jan. 8 last, while our engine 7749 was passing over East Fifty-third Street very slowly, speed about three miles per hour, it was run into by your automobile truck No. 131,199, damaging our locomotive to the extent of \$1.31." It is stated that the automobile truck suffered no injury and the \$1.31 was paid.—*Iron Age*.

74,827 EMPLOYEES TAKE \$6,748,850 OF LIBERTY BONDS

Partial reports received up to Wednesday evening by the Liberty Loan Committee of Railroads of which A. H. Smith, president of the New York Central, is chairman, showed a total of 74,827 individual subscriptions by railroad workers of all ranks aggregating \$6,748,850, being an average of \$90.46 for each subscriber. This sum does not include any one of the various subscriptions by railroad companies themselves in large block sums, which aggregate over \$40,000,000 up to date, a half-dozen companies having taken from \$2,000,000 to \$5,000,000 of the new bond issue.

The Railroads Committee has concentrated its efforts on carrying out the government's policy of securing the largest possible number of individual participants, scattering the securities in many hands, and the railroad returns show a vast number of \$50 subscriptions which will be taken out of the salaries monthly over a period of a year. The railroad returns shows spirit of exceptional patriotism and self-sacrifice in various departments, and the purchase of a bond in countless instances involves saving from exceedingly moderate earnings. Several local railroad officers already have made a record 100 per cent perfect, in that every member—even down to the office boy—has taken at least one Liberty bond.

In the car department of the New York Central lines east of Buffalo there are employed about 6,000 car inspectors, repairers and cleaners, and out of this force up to Wednesday no less than 2,640 men had subscribed for bonds, the aggregate subscription being \$146,650, or an average of \$55.54 for each person.

A laborer in Pennsylvania presented \$1,000 cash for a Liberty bond, and held the record of such subscriptions until Wednesday, when another worker in New York City yards subscribed for \$1,900 of bonds to be paid for in cash.

Arrangements have been made to protect employees' subscriptions in whatever number they are made with their employing officers up to the last minute, which is Friday noon. Chairman A. H. Smith of the Railroads Committee Wednesday sent telegrams to company presidents and other officers throughout the country urging that efforts be intensified and that there be no relaxation whatever up to the final hour of the campaign.

The Committee's suggestion that red-ink appeals for Liberty bond buying be printed on railroad stationery and on all dining car menus has been adopted generally throughout the nation.

The following are the partial reports of various railroads up to Wednesday of the number and amounts of individual employees' subscriptions:

Railroad Company.	Number of Subscriptions.	Total of Subscriptions.
Augusta Southern.....	5	450
Atlantic Coast Line.....	1,003	97,650
Atchison, Topeka & Santa Fe.....	2,731	269,250
Balt. & Ohio Chicago Terminal.....	64	5,950
Bangor & Aroostook.....	62	11,100
Buffalo & Susquehanna.....	27	36,300
Buffalo Creek.....	10	700
Buffalo, Rochester & Pittsburgh.....	1,189	119,350
Central Vermont.....	140	8,700
Central of New Jersey.....	600	46,150
Charleston & Western Carolina.....	131	12,850
Chicago & Eastern Illinois.....	245	23,200
Chicago & North Western.....	371	32,650
Chicago & Western Indiana.....	298	25,650
Chicago, Burlington & Quincy.....	140	18,950
Chicago, Milwaukee & St. Paul.....	554	42,150
Delaware & Hudson.....	5,747	366,900
Delaware, Lackawanna & Western.....	3,865	309,200
Erie.....	3,903	310,000
Florida East Coast.....	16	2,350
Georgia & Florida.....	25	2,350
Grand Rapids & Indiana.....	597	48,400
Great Northern.....	1,675	139,450
Kansas City Southern.....	379	51,750
Louisville & Nashville.....	773	97,750
Maine Central.....	76	23,850
Missouri Pacific.....	49	3,300
Minn., St. Paul & Sault Ste. Marie.....	632	65,600
Missouri & Northern Arkansas.....	107	9,350
Nashville, Chattanooga & St. Louis.....	203	39,250
New York, Chicago & St. Louis.....	921	71,150

New York Central Railroad.....	9,043	665,900
New York Central Lines.....	14,961	1,202,450
New York, New Haven & Hartford.....	158	15,250
New York, Ontario & Western.....	147	15,150
Norfolk & Western.....	569	92,250
Northern Pacific.....	...	95,000
Pacific Electric.....	...	100,000
Pennsylvania Railroad.....	8,983	667,500
Pennsylvania Lines West.....	4,168	411,950
Philadelphia & Reading.....	1,651	139,400
Richmond, Fredericksburg & Potomac.....	176	8,500
St. Louis & San Francisco.....	138	90,900
Spokane, Portland & Seattle.....	...	50,000
South Buffalo.....	19	11,650
Southern Pacific.....	5,945	647,600
Terminal Railroad of St. Louis.....	340	22,750
Texas & Pacific.....	732	59,500
Union Pacific.....	...	300,300
Oregon-Washington.....	2,180	219,300
Virginian.....	126	8,300
Eastern Maryland.....	27	2,450
Western Pacific.....	514	112,150
Yakima Valley (Oregon-Wash.).....	83	5,650
Weath. Min. Wells & No.....	18	900

BLOCK SUBSCRIPTIONS OVER \$40,000,000

The railroads continue to make block subscriptions for bonds as investments. The total block subscriptions of this kind that have come to the attention of the *Railway Age Gazette* now total over \$40,000,000, big subscriptions were reported during the last few days by the following roads:

Atchison, Topeka & Santa Fe, \$5,000,000; Chicago & Northwestern, \$5,000,000; El Paso & South Western, \$1,000,000; New Orleans, Texas & Mexico, \$250,000; Northern Pacific, \$2,500,000, and the Delaware, Lackawanna & Western, \$2,000,000.

A number of supply companies have also made large subscriptions, among them being the following:

American Car & Foundry Company.....	\$2,000,000
American Locomotive Company.....	500,000
American Vanadium Company.....	250,000
General Electric Company.....	5,000,000
Midvale Steel & Ordnance Company.....	2,500,000
J. L. Replogle.....	500,000
United States Steel Corporation.....	50,000,000
Vanadium Alloys-Steel Company.....	100,000

LIBERTY BONDS FOR STEADY ATTENDANCE RECORDS

The Globe Seamless Steel Tubes Company, Chicago, has arranged to assist those of its employees desiring to subscribe to the Liberty Loan by enabling them to pay for the bonds through the deduction of installments from their pay checks. Full payment for all bonds subscribed will be made by the company and \$2 will be deducted from each semi-monthly pay check for each \$50 bond subscribed by an employee. In case an employee leaves the service of the company or is discharged before payment is completed, the installments paid in for bonds will be refunded. The Globe company has also subscribed for a block of Liberty Bonds from which it will set aside \$50 bonds as bonuses for regular attendance by employees who have subscribed for one or more bonds. For this purpose, the attendance records of the employees will be examined on May 31, 1918, and those men whose records show no absence except on permission obtained from the manager will each receive a fully paid up Liberty Bond. The owner of a paid up Liberty Bond who so desires can borrow money on it from the Globe company at the same rate of interest as paid by the bond, namely 3½ per cent.

GENERAL ELECTRIC COMPANY

Up to Monday, 40,000 employees of the General Electric Company had subscribed \$2,955,550 for Liberty Loan Bonds. The Schenectady works and general offices of the company were in the lead with a total of \$1,055,700 with the Lynn (Mass.) works second with total subscriptions of \$557,450. The subscribers at the various plants and general offices were as follows: Schenectady, 13,223 individuals, \$1,055,700; Lynn, 8,598 individuals, \$557,450; Pittsfield, 4,037 individuals, \$282,550; Erie, 2,445 individuals, \$176,900; Edison Lamp Works, 3,175 individuals, \$211,900; Fort Wayne 2,125 individuals, \$151,550; Sprague Works, 802 individuals, \$57,550; National Lamp Works, 3,910 individuals, \$253,600; district offices, 1,685 individuals, \$208,350; total, 40,000 individuals, \$2,955,550.

The Bethlehem Steel Company announced early in the week that its employees had subscribed for \$4,455,450 of bonds on the partial payment plan.

General News Department

The Canadian Pacific has announced that it will allow all employees who enlist in the United States Army or Navy, six months' salary, payable monthly, provided they cross the sea. On their return they will be given their former or similar positions.

The United States Civil Service Commission announces examinations, July 17, for the position of telegraph and telephone inspector under the division of valuation of the Interstate Commerce Commission; salaries from \$1,200 to \$1,800. Applicants must be between 25 and 55 years old.

The Chamber of Commerce of the State of New York has adopted resolutions, by a vote of 186 to 1, favoring legislation looking to the adoption of the daylight saving plan. The preamble says that satisfaction is reported in other countries, and that the movement has the endorsement of over 100 leading commercial organizations of this country.

The Railway Fuel Company, with capital stock of \$10,000, has been organized at Birmingham, Ala., and has acquired coal lands to the extent of 2,000 acres or more, in Walker county, Alabama. The president and other officers of the company are officers of the Southern Railway Company, and it is said that the purpose is to furnish coal for use in the locomotives and in the shops of that railroad.

The mayor of Baltimore has engaged Bion J. Arnold, of Chicago, as consulting engineer to advise the city in connection with the extensive plans for improvement which have been laid before the mayor by the Pennsylvania Railroad. These plans include new tunnels through the city to convert the Philadelphia, Baltimore & Washington into a four-track railroad; and a considerable public sentiment is calling on the mayor to require the railroad company to install electric traction on its tunnel lines.

The relief department of the Chicago, Burlington & Quincy spent \$586,474 in the year ended December 31, 1916, in benefits to members. During the year 5,331 members were reported disabled on account of sickness of whom 4,765 recovered, 182 died and the remainder were still under care at the end of the year; 6,417 cases of disability on account of accident were reported, of which 68 resulted fatally. The membership in the relief fund was 28,322 at the end of 1916, a net gain of 2,428 over the previous year.

In a safety bulletin addressed to all employees, R. C. Richards, chairman of the central safety committee of the Chicago & Northwestern, asks to be advised of every unsafe condition or practice which comes within the observation of the employee, and calls attention to the fact that printed postcards are furnished for the purpose of sending in suggestions. From January 1, 1912, to December 31, last—five years—25,183 recommendations were made on "safety" postal cards, or otherwise, and all but 1,019 of them were adopted and put into effect.

The Southern Railway, to aid in discouraging the emigration of negroes from the southern states, has issued orders to discontinue the assembling, holding and using of extra passenger and baggage cars for laborer movements, and otherwise to discourage the negro exodus in every legitimate manner. Bankers and business men are being urged to endeavor to find employment of some kind for all surplus negro labor in their communities, and negro preachers are asked to take strong ground against the people of their race being lured away by promise of higher wages in other sections.

The chief medical examiner of the Baltimore & Ohio now has a special car fitted up with appliances for the examination of employees in train service. The car may be called a traveling office of the medical department and it will be used for making examinations of new employees entering the service in any branch of it requiring perfect vision and hearing. Instructions in First Aid will be given to trainmen, shop mechanics, track men and

other employees. The car is used also as living quarters of members of the medical staff while traveling.

The governor of New Jersey has appointed a commission of ten members to co-operate with a similar commission appointed in New York to consider the problem of providing additional communication between New York City and the west side of the Hudson river. This commission, which represents a "Bridge District" made up of three counties, Hudson, Passaic and Essex, is to consider tunnels beneath the river for wagon traffic, the proposition to build a bridge, although prominent when the idea of a commission was first broached, having been virtually laid aside because of the great cost which would be involved in building a bridge of a single span across the Hudson river. One of the members of the commission now appointed is Franklin Murphy, former governor, and another is Thomas N. McCarter, president of the Public Service Corporation. Mr. McCarter has recently issued a report of studies made concerning the feasibility of a tunnel, with an estimate of the cost. (*Railway Age Gazette*, April 20, 1917.)

The First "Limited"

J. R. Wood, former passenger traffic manager of the Pennsylvania Railroad, who died on May 2, and whose death was noticed in the *Railway Age Gazette* of May 11, page 1025, is the subject of an obituary published by the railroad company, in which it is said that it was due to his initiative that the first "limited" train was placed in operation on any American railroad, the well known "Pennsylvania Limited," between New York and Chicago. When first put on, this train took about 26½ hours to make the journey of 912 miles. Mr. Wood served all through the Civil War, and was in action at the Battles of Yorktown, Crampton Gap, Antietam and Fredericksburg. He was taken prisoner at Dupal's Plantation, Louisiana, in August, 1863. At the time of his discharge, on July 21, 1865, he was adjutant and first lieutenant of the Eleventh New York Cavalry.

The Southern Reorganizes Freight Claim Department

To bring the freight claim department of the Southern Railway System more closely in touch with the shipping public to the end that quicker action may be had in the adjustment of freight claims, a central freight claim office has been established at Chattanooga, Tenn., with branch freight claim offices at Charlotte, N. C.; Atlanta, Ga.; New Orleans, La., and Louisville, Ky. The present freight claim offices at Washington and Cincinnati will be continued. At any of these offices freight claims may be filed and adjusted.

The "Cause and Prevention Department," under the supervision of W. H. Gatchell, assistant to vice-president, has been transferred from Washington to Chattanooga. This department has in charge the discovery and prevention of causes, which lead to loss and damage to freight, and will co-operate with and aid the freight claim department in the prompt adjustment of loss and damage claims.

Central of Georgia Accounting Department Organizes for Military Aid

W. D. Beymer, controller of the Central of Georgia, called a meeting on June 5 for the purpose of organizing an association to give aid and comfort to employees of the accounting department, who enter military service, and their dependents. The meeting was attended by the heads of the accounting department, by six men elected from each floor of the department, and by three women elected from the department as a whole, who formed a board of directors and organized an association to be known as the Central of Georgia Accounting Department Military Aid and Comfort Association. Among the purposes of the organization are to place enlisted men on the mailing list of the employees' magazine, to send them periodicals,

books, etc., and to provide them with sweaters, mufflers, wrist bands and other articles of comfort. All employees of the department, 280 in number, have joined the association. Assessments not exceeding two dollars a month for those receiving a salary of \$200 or over, \$1 for those receiving under \$200 and over \$125, fifty cents for those receiving under \$125 and over \$75, and 25 cents for those receiving less than \$75 a month, will probably be made monthly until a considerable sum has been accumulated. Each assessment will produce about \$150. The officers elected are: President, W. D. Beymer; vice-president, W. B. Kinnistry, auditor of the C. of G.; treasurer, D. W. Brantley, and secretary, Edith G. Williamson.

Employees Present a Silk Flag to President Besler

One cent apiece from the 13,000 employees of the Central of New Jersey, enabled the employees of that road to present President William G. Besler with a large silk flag last Thursday evening. Each employee was allowed to contribute one cent and no more, and was called upon for his autograph signature. The signatures were obtained by classes of employees and were bound in a large album which was suitably engrossed and also presented to Mr. Besler.

The presentation was made at a Flag Day rally and smoker held on the second floor of the Post Office building at the Jersey City Terminal, Thursday evening. The address of presentation was made by Superintendent Charles H. Stein, at Jersey City. One hundred girls representing the women employees of the railway added an interesting touch to the occasion when they presented President Besler with a large bouquet of American beauty roses.

Railway Commission Arrives in Russia

Cable despatches last Saturday announced the arrival in Irkutsk of the railway commission to Russia, headed by John Stevens. The commission has since left for Petrograd and is expected to arrive in that city June 17. Its members are, in addition to Mr. Stevens, W. L. Darling, formerly chief engineer of the Northern Pacific; Henry Miller, formerly operating vice-president of the Wabash; George Gibbs, electrical engineer, and J. P. Greiner, late of the Baltimore & Ohio.

In an interview to the Associated Press, reported in the newspapers, N. V. Nekrasoff, minister of ways and communication, expressed the opinion that the commission can render an enormous service to Russia. He was particularly convinced of this, he said, as he was leaving it an absolutely free hand to decide what the Russian railways needed.

The commission will be furnished with interpreters and other assistants by the Foreign Office, which, M. Nekrasoff says, is taking great interest in the American body's work.

"In pursuance of our policy in leaving the commission a free hand," continued M. Nekrasoff, "we have no detailed program for it. The commission will spend some days at Vladivostok in order to arrange for the construction of a workshop for putting together American locomotives, which heretofore have been assembled only at Harbin. On the way, Chairman Stevens will inspect the Siberian Railroad and decide on a report to us as to what defects there are in the construction and management and how these may be remedied.

"There is an enormous future, both during and after the war, for American producers in the construction of railroads and the supply of materials alike. Already vast orders are pending. Last year we ordered 600 locomotives, and this year 500 more. We want altogether 3,000 locomotives as soon as possible. We have ordered in America already 20,000 freight cars, and desire at least 50,000. We have also ordered in America 150,000 tons of rails, and want altogether 350,000 tons.

"I shall discuss with the commission our great railroad construction program, adopted before the revolution, and now being reconsidered. I regard the arrival of the commission as a most important event, both for Russia's successful conduct of the war and her economic development afterward. My department will do everything to facilitate the work of Mr. Stevens and his associates, and expects from it still closer bonds with industrial America."

Later despatches also advise that Mr. Nekrasoff has said that the commission has already rendered important services. He referred particularly to the plan for the establishment at Vladivostok of a great workshop for assembling locomotives, which had been recommended by the commission.

MEETINGS AND CONVENTIONS

The following list gives names of secretaries, dates of next or regular meetings and places of meeting of those associations which will meet during the next three months. The full list of meetings and conventions is published only in the first issue of the Railway Age Gazette for each month.

- AMERICAN ASSOCIATION OF DEMURRAGE OFFICERS.—F. A. Pontious, 455 Grand Central Station, Chicago. Next meeting, July 18, 1917, Asheville, N. C.
- AMERICAN ASSOCIATION OF FREIGHT AGENTS.—R. O. Wells, Illinois Central, Chicago, Ill. Next meeting, June, 1917, Denver.
- AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—E. H. Harman, Room 161, Union Station, St. Louis, Mo. Annual meeting, August 8-10, Minneapolis, Minn.
- AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—Owen D. Kinsey, Illinois Central, Chicago. Next convention, August 30-September 1, Hotel Sherman, Chicago.
- AMERICAN SOCIETY FOR TESTING MATERIALS.—Prof. E. Marburg, University of Pennsylvania, Philadelphia, Pa. Next annual meeting, June 26-29, Hotel Traymore, Atlantic City, N. J.
- AMERICAN SOCIETY OF CIVIL ENGINEERS.—Chas. Warren Hunt, 220 W. 57th St., New York. Regular meetings, 1st and 3d Wednesday in month, except July and August, 220 W. 57th St., New York.
- ASSOCIATION OF RAILWAY TELEGRAPH SUPERINTENDENTS.—W. L. Connelly, Supt. of Telegraph, Indiana Harbor Belt, Gibson, Ind. Next annual meeting, September 11-13, 1917, Washington, D. C.
- CANADIAN RAILWAY CLUB.—James Powell, Grand Trunk, P. O. Box 7, St. Lambert (near Montreal), Que. Regular meetings, 2d Tuesday in month, except June, July and August, Windsor Hotel, Montreal, Que.
- CANADIAN SOCIETY OF CIVIL ENGINEERS.—Clement H. McLeod, 176 Mansfield St., Montreal, Que. Regular meetings, 1st Thursday in October, November, December, February, March and April. Annual meeting, January, Montreal.
- CAR FOREMAN'S ASSOCIATION OF CHICAGO.—Aaron Kline, 841 Lawlor Ave., Chicago. Regular meetings, 2d Monday in month, except June, July and August, Hotel La Salle, Chicago.
- CENTRAL RAILWAY CLUB.—H. D. Vought, 95 Liberty St., New York. Regular meetings, 2d Friday in January, May, September and November. Annual dinner, 2d Thursday in March, Hotel Statler, Buffalo, N. Y.
- CINCINNATI RAILWAY CLUB.—H. Boutet, Chief Interchange Inspector, Cin'ti Rys., 101 Carew Bldg., Cincinnati. Regular meetings, 2d Tuesday, February, May, September and November, Hotel Sinton, Cincinnati.
- ENGINEERS' SOCIETY OF WESTERN PENNSYLVANIA.—Elmer K. Hiles, 568 Union Arcade Bldg., Pittsburgh, Pa. Regular meetings, 1st and 3rd Tuesday, Pittsburgh, Pa.
- FREIGHT CLAIM ASSOCIATION.—Warren P. Taylor, Traffic Manager, R. F. & P., Richmond, Va. Annual convention, June 19, Chicago, Ill.
- GENERAL SUPERINTENDENTS' ASSOCIATION OF CHICAGO.—A. M. Hunter, 321 Grand Central Station, Chicago. Regular meetings, Wednesday, preceding 3d Thursday in month, Room 1856, Transportation Bldg., Chicago.
- INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—A. L. Woodworth, C. H. & D., Lima, Ohio. Next annual meeting, August 21-23, 1917, Chicago.
- INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 1126 W. Broadway, Winona, Minn. Annual meeting to have been held September 4-7, Hotel Sherman, Chicago, postponed indefinitely.
- MASTER CAR AND LOCOMOTIVE PAINTERS' ASSOCIATION OF THE UNITED STATES AND CANADA.—A. P. Dane, B. & M., Reading, Mass. Next annual meeting, September 11, 1917, Chicago.
- NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meeting, 2d Tuesday in month, except June, July, August and September, Boston.
- NEW YORK RAILROAD CLUB.—Harry D. Vought, 95 Liberty St., New York. Regular meeting, 3d Friday in month, except June, July and August, 29 W. 39th St., New York.
- NIAGARA FRONTIER CAR MEN'S ASSOCIATION.—Geo. A. J. Hochgrebe, 623 Brisbane Bldg., Buffalo, N. Y. Meetings, 3d Wednesday in month, New York Telephone Bldg., Buffalo, N. Y.
- PACIFIC RAILWAY CLUB.—W. S. Wollner, Assistant to Chief Engineer, Northwestern Pacific R. R., San Francisco, Cal.
- PEORIA ASSOCIATION OF RAILROAD OFFICERS.—F. C. Stewart, 410 Masonic Temple Bldg., Peoria, Ill. Regular meetings, 3d Thursday in month, Jefferson Hotel, Peoria.
- RAILROAD CLUB OF KANSAS CITY.—Claude Manlove, 1008 Walnut St., Kansas City, Mo. Regular meetings, 3d Saturday in month, Kansas City.
- RAILWAY CLUB OF PITTSBURGH.—J. B. Anderson, Room 207, P. R. R. Sta., Pittsburgh, Pa. Regular meetings, 4th Friday in month, except June, July and August, Pittsburgh Commercial Club Rooms, Colonial-Annex Hotel, Pittsburgh.
- RICHMOND RAILROAD CLUB.—F. O. Robinson, C. & O., Richmond, Va. Regular meetings, 2d Monday in month, except June, July and August.
- ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Union Station, St. Louis, Mo. Regular meetings, 2d Friday in month, except June, July and August, St. Louis.
- SOUTHERN & SOUTHWESTERN RAILWAY CLUB.—A. J. Merrill, Grand Bldg., Atlanta, Ga. Regular meetings, 3d Thursday, January, March, May, July, September, November, 10 a. m., Piedmont Hotel, Atlanta.
- TRAFFIC CLUB OF CHICAGO.—W. H. Wharton, La Salle Hotel, Chicago.
- TRAFFIC CLUB OF NEW YORK.—C. A. Swope, 291 Broadway, New York. Regular meetings, last Tuesday in month, except June, July and August, Waldorf-Astoria Hotel, New York.
- TRAFFIC CLUB OF PITTSBURGH.—D. L. Wells, Gen'l Ag't, Erie R. R., 1924 Oliver Bldg., Pittsburgh, Pa. Meetings bi-monthly, Pittsburgh.
- TRAIN DESPATCHERS' ASSOCIATION OF AMERICA.—J. F. Mackie, 7122 Stewart Ave., Chicago. Next meeting, June 19, Fresno, Cal.
- TRANSPORTATION CLUB OF DETROIT.—W. R. Hurley, Superintendent's office, N. Y. C. R. R., Detroit, Mich. Meetings monthly, Normandie Hotel, Detroit.
- UTAH SOCIETY OF ENGINEERS.—Frank W. Moore, 1111 Newhouse Bldg., Salt Lake City, Utah. Regular meetings, 3d Friday in month, except July and August, Salt Lake City.
- WESTERN CANADA RAILWAY CLUB.—L. Kon, Immigration Agent, Grand Trunk Pacific, Winnipeg, Man. Regular meetings, 2d Monday, except June, July and August, Winnipeg.
- WESTERN RAILWAY CLUB.—J. W. Taylor, 1112 Karpen Bldg., Chicago. Regular meetings, 3d Monday in month, except June, July and August, Hotel Sherman, Chicago.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF APRIL, 1917

Name of road.	Average mileage operated during period.	Operating revenues			Operating expenses			Net from railway operation.	Railway tax accruals.	Operating income (or loss).	Increase (or decr.) with comp. with last year.			
		Freight.	Passenger.	Total (inc. misc.).	Way and structures.	Maintenance of Equip-ment.	Traffic.					Trans- portation.	Miscel- lanous.	General.	Total.
Alabama & Vicksburg.....	143	\$96,805	\$34,474	\$131,279	\$17,043	\$35,303	\$15,575	\$53,195	\$638	\$5,408	\$116,162	\$9,700	\$17,026	-\$2,785
Alabama Great Southern.....	312	402,344	110,377	512,721	70,081	121,600	15,040	147,902	2,149	11,914	359,686	19,331	21,532	30,303
Ann Arbor.....	294	209,626	46,990	256,616	18,792	36,332	5,245	122,801	496	7,559	191,224	13,100	60,778	5,140
Arizona Eastern.....	378	318,503	52,677	371,180	45,781	36,754	2,572	92,332	8,784	14,228	200,275	20,018	179,023	33,976
Atchafalaya, Topeka & Santa Fe.....	8,649	8,059,563	2,276,539	11,336,102	1,450,812	2,025,098	226,761	3,784,953	67,577	264,301	7,774,874	518,131	3,014,596	29,596
Atlanta & West Point.....	93	69,704	43,617	113,321	13,089	24,066	6,496	46,263	2,545	4,900	97,360	7,345	26,030	5,711
Atlanta, Birmingham & Atlantic.....	640	263,068	42,276	305,344	46,496	49,834	16,433	145,708	34	12,161	270,666	57,809	44,199	18,805
Atlantic & St. Lawrence.....	167	140,997	22,817	179,519	57,125	23,024	3,962	141,474	.....	5,433	231,018	10,721	62,230	13,967
Atlantic City.....	170	83,418	96,288	179,706	16,707	22,224	2,166	108,030	106	491	149,635	10,000	30,367	8,832
Atlantic Coast Line.....	4,777	2,362,885	967,172	3,330,057	393,338	626,232	59,550	1,361,099	17,499	76,598	2,532,655	188,000	89,415	258,666
Baltimore & Ohio.....	4,545	8,094,674	1,400,564	9,495,238	1,110,052	2,090,716	190,867	4,111,907	66,130	257,678	7,825,856	342,391	2,123,931	534,008
Baltimore & Ohio Chicago Terminal.....	79	.....	315	315	18,767	16,658	1,039	108,264	1,796	6,731	162,699	23,414	14,936	23,010
Baltimore, Chesapeake & Atlantic.....	88	54,620	24,351	78,971	15,531	15,531	995	48,080	.....	2,482	73,758	9,967	7,676	3,616
Bangor & Aroostook.....	632	365,830	67,026	432,856	47,797	73,040	260	131,233	3,571	12,188	272,079	15,000	164,733	4,321
Belt Ry. Co. of Chicago.....	31	.....	.....	332,617	24,869	46,893	1,417	149,670	.....	6,180	229,330	13,898	89,389	19,773
Bessemer & Lake Erie.....	205	613,240	29,337	642,577	89,557	223,539	10,708	297,018	.....	16,935	630,585	34,202	10,815	41,986
Birmingham & Gulf.....	36	251,779	4,792	262,030	27,160	32,000	1,210	40,042	89	3,885	104,237	29,864	127,929	8,352
Birmingham Southern.....	45	66,953	1,604	68,557	17,661	26,236	729	39,130	.....	3,620	87,376	2,505	1,665	15,058
Boston & Maine.....	2,305	2,876,153	1,300,130	4,176,283	502,572	722,622	33,032	2,275,069	22,454	118,398	3,674,148	1,041,235	172,209	430,798
Buffalo & Susquehanna R. R. Corporation.....	233	109,398	6,479	115,877	21,892	41,916	1,731	51,061	.....	6,183	122,783	2,600	7,617	26,058
Buffalo, Rochester & Pittsburgh.....	587	956,662	103,650	1,060,312	121,942	318,243	15,799	461,145	1,376	29,089	947,594	33,000	117,439	113,348
Canadian Pacific Lines in Maine.....	234	252,909	36,703	289,612	26,365	34,785	6,122	122,337	.....	5,156	194,755	113,526	108,026	25,065
Carolina, Clinchfield & Ohio.....	283	312,498	21,455	333,953	33,951	50,029	16,076	83,626	.....	13,287	196,710	145,093	131,693	23,968
Carolina, Clinchfield & Ohio of S. C.....	18	15,493	1,155	16,648	2,010	97	2,463	3,702	.....	924	9,196	8,065	600	7,465
Central of Georgia.....	1,919	771,721	270,391	1,042,112	177,104	200,496	39,903	386,631	3,714	41,074	846,743	64,328	268,028	53,299
Central of New Jersey.....	684	2,127,204	490,108	2,617,312	316,364	568,171	28,267	1,083,454	17,137	69,817	2,083,454	145,627	601,525	294,293
Central New England.....	301	431,103	30,583	461,686	71,128	37,757	996	161,716	936	8,316	280,663	207,878	188,261	17,854
Central Vermont.....	411	262,350	73,109	335,459	38,061	51,099	7,690	192,658	2,275	10,284	302,069	73,514	57,936	16,867
Chesapeake & Western Carolina.....	342	136,169	28,011	164,180	29,800	22,344	4,122	78,541	.....	3,444	138,442	33,734	26,363	39,564
Chesapeake & Ohio Lines.....	2,380	3,507,088	642,431	4,149,519	527,414	883,932	55,626	1,489,843	28,806	94,952	3,077,755	134,500	1,219,929	245,331
Chicago & Alton.....	1,053	1,161,058	325,597	1,486,655	156,109	309,999	37,792	619,436	11,929	32,638	1,167,185	55,400	377,484	110,945
Chicago & Eastern Illinois.....	1,311	1,268,131	257,319	1,525,450	159,651	215,279	39,808	693,688	11,702	35,905	1,028,265	231,700	179,903	32,631
Chicago & Erie.....	477	219,920	54,632	274,552	206,346	226,229	46,172	504,664	11,702	35,905	1,028,265	231,700	179,903	32,631
Chicago, Great Western.....	1,496	866,297	271,589	1,137,886	66,288	116,274	19,149	276,242	709	18,295	495,302	293,552	252,330	66,783
Chicago, Indianapolis & Louisville.....	654	554,755	174,368	729,123	66,288	116,274	19,149	276,242	709	18,295	495,302	293,552	252,330	66,783
Chicago, Indianapolis & Western.....	13	.....	.....	275,616	41,702	24,211	1,398	141,848	23,650	5,922	238,732	36,885	33,308	3,988
Chicago Junction.....	10,222	6,803,262	1,592,261	8,395,523	931,666	1,658,905	147,950	3,883,834	63,101	160,348	6,718,432	457,383	2,153,646	25,069
Chicago, Milwaukee & St. Paul.....	255	141,576	21,016	162,592	20,996	38,808	5,757	78,736	.....	6,007	150,304	8,000	12,194	8,941
Chicago, Peoria & St. Louis.....	477	219,920	54,632	274,552	206,346	226,229	46,172	504,664	11,702	35,905	1,028,265	231,700	179,903	32,631
Chicago, Rock Island & Gulf.....	7,656	4,692,420	1,507,333	6,199,753	859,334	1,270,759	9,966	1,087,744	1,197	9,027	4,879,023	324,953	1,496,800	70,059
Chicago, Rock Island & Pacific.....	7,656	4,692,420	1,507,333	6,199,753	859,334	1,270,759	9,966	1,087,744	1,197	9,027	4,879,023	324,953	1,496,800	70,059
Chicago, St. Paul, Minn., & Omaha.....	1,753	1,199,257	431,216	1,630,473	128,080	222,566	26,791	720,881	45,045	163,050	4,879,023	324,953	1,496,800	70,059
Chicago, Terre Haute & Southeastern.....	375	237,959	15,944	253,903	40,397	64,695	4,152	125,042	1,706	7,675	243,667	17,535	4,022	43,386
Cincinnati, Hamilton & Dayton.....	528	668,980	90,650	759,630	137,185	173,986	15,452	416,283	3,487	19,122	764,684	91,059	34,298	56,476
Cincinnati, Indianapolis & Western.....	322	158,451	39,546	197,997	36,314	36,314	6,574	93,885	530	7,629	181,466	36,133	25,967	292
Cincinnati, New Orleans & Texas Pacific.....	337	776,993	217,668	994,661	1,071,700	73,013	30,977	331,451	8,401	18,033	708,933	362,767	46,000	316,767
Cincinnati Northern.....	246	156,427	12,802	169,229	28,890	32,226	2,793	68,165	.....	3,369	135,363	40,583	33,583	3,658
Cleveland, Cincinnati, Chic. & St. Louis.....	2,387	2,979,137	836,432	3,815,569	365,986	786,053	73,385	1,641,090	26,529	89,878	2,979,668	1,202,045	1,040,963	127,827
Coal & Coke.....	197	88,329	17,464	105,793	22,942	26,620	1,143	46,523	.....	3,021	100,249	9,555	4,555	9,311
Colorado Midland.....	338	77,513	11,191	88,704	17,262	30,051	6,335	45,759	588	5,949	103,944	9,000	18,013	12,972
Colorado & Southern.....	1,103	612,918	128,320	741,238	100,692	151,918	10,820	241,559	4,525	27,755	537,270	259,908	45,000	39,319
Colorado & Wyoming.....	43	34,863	2,634	37,497	8,645	14,292	85	37,615	.....	3,338	63,975	3,306	32,838	5,766
Cripple Creek & Colorado Springs.....	87	77,664	11,811	89,475	6,975	9,467	1,420	23,028	.....	4,624	45,514	45,867	42,867	8,059
Cumberland Valley.....	164	343,640	55,172	398,812	29,414	32,019	4,360	117,160	592	8,847	191,445	13,054	211,163	42,881
Delaware & Hudson Co.-R. R. Dept.....	879	1,957,110	213,665	2,170,775	235,139	463,055	30,513	1,028,522	14,249	85,286	1,836,694	457,565	227,300	27,300
Delaware, Lackawanna & Western.....	955	3,124,023	702,343	3,826,366	334,685	710,064	77,483	1,581,142	40,027	86,419	2,847,141	261,866	1,216,900	75,745
Denver & Rio Grande.....	2,578	1,853,812	349,450	2,203,262	276,088	424,976	39,357	729,373	31,665	64,907	1,563,952	787,343	90,000	

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF APRIL, 1917—CONTINUED

Name of road.	Average mileage operated during period.	Operating revenues				Operating expenses			Net from railway operation.	Railway tax accruals.	Operating income (or loss).	Increase (or decrease) last year.
		Freight.	Passenger.	Total (inc. misc.).	Maintenance of way and structures.	Equip-ment.	Traffic.	Trans- portation.	Miscel- laneous.			
Florida East Coast.....	765	\$415,210	\$226,745	\$641,955	\$61,412	\$83,693	\$7,572	\$203,104	\$8,758	\$15,044	\$362,906	\$164,051
Fort Worth & Denver City.....	454	136,179	99,915	236,094	49,698	77,375	3,247	142,884	2,747	18,865	297,344	123,821
Galveston, Harrisburgh & San Antonio.....	1,361	1,234,058	339,658	1,573,716	197,627	202,928	32,946	497,541	11,899	37,066	975,588	398,788
Galveston Wharf.....	14	.....	.....	.....	1,117	1,189	295	16,231	24,821	661	44,316	3,372
Georgia.....	307	212,656	72,765	285,421	26,640	46,184	13,917	124,520	166	9,490	220,662	4,216
Georgia, Southern & Florida.....	403	126,447	56,779	183,226	30,787	49,010	7,037	83,348	1,310	9,755	111,547	19,832
Grand Rapids & Indiana.....	575	374,105	118,156	492,261	60,616	121,213	10,993	247,869	1,841	18,747	439,522	37,184
Grand Trunk Western.....	347	632,000	130,000	762,000	98,801	126,119	15,346	357,611	5,329	20,137	623,673	164,376
Great Northern.....	8195	4,833,637	1,247,129	6,080,766	1,364,066	962,050	104,811	2,374,677	83,137	107,287	4,972,569	349,727
Gulf & Ship Island.....	308	113,737	29,944	143,681	29,183	25,850	3,555	46,782	323	7,928	113,330	33,077
Gulf, Colorado & Santa Fe.....	1,937	1,027,619	230,481	1,258,100	329,702	205,674	33,177	483,396	.....	71,399	1,250,183	177,539
Gulf, Mobile & Northern.....	402	132,281	22,757	155,038	25,841	55,115	3,626	55,115	.....	8,588	118,790	8,421
Hocking Valley.....	35	610,987	73,366	684,353	61,683	175,323	8,919	256,437	.....	18,574	521,284	154,741
Houston, East & West Texas.....	191	107,252	28,489	135,741	18,441	17,934	2,305	51,031	831	3,263	93,804	42,950
Houston & Texas Central.....	918	422,696	121,461	544,157	84,860	87,710	16,924	188,937	4,563	18,191	400,672	152,667
Illinois Central.....	4,766	5,204,293	1,212,219	6,416,512	909,280	1,403,466	101,018	2,227,532	45,430	166,348	4,830,675	1,472,849
Indiana Harbor Belt.....	109	.....	.....	.....	45,287	58,549	2,588	390,922	.....	9,809	337,556	8,922
International & Great Northern.....	1,159	679,760	195,805	875,565	121,952	137,270	25,489	390,063	5,502	29,665	704,354	232,154
Kanawha & Michigan.....	177	92,318	31,197	123,515	35,586	79,739	7,337	72,245	.....	7,337	197,568	19,988
Kansas City, Mexico & Orient of Texas.....	466	96,993	14,256	111,249	19,579	26,811	3,951	64,121	.....	4,679	119,141	5,000
Kansas City Southern.....	837	836,285	131,497	967,782	107,899	141,361	29,623	312,533	.....	40,466	630,473	58,955
Kansas City Terminal Co.....	24	.....	.....	.....	8,895	10,288	.....	42,569	3,202	1,747	66,024	18,536
Lake Erie & Western.....	900	547,171	49,612	596,783	72,844	102,652	14,074	253,594	.....	14,540	457,704	171,443
Lehigh & Hudson River.....	97	182,499	3,540	186,039	16,335	23,378	1,772	74,948	.....	4,733	121,106	5,600
Lehigh & New England.....	296	271,052	1,414	272,466	36,214	40,263	2,012	81,643	.....	8,834	168,930	10,335
Lehigh Valley.....	1,442	3,358,153	373,394	3,731,547	462,403	772,186	79,083	1,730,411	14,923	97,502	3,155,044	936,973
Long Island.....	397	366,446	663,022	1,029,468	186,759	146,203	9,566	528,063	13,237	37,807	892,588	293,981
Los Angeles & Salt Lake.....	1,154	729,274	275,057	1,004,331	120,398	202,928	32,283	292,926	19,739	24,233	632,598	456,266
Louisiana & Arkansas.....	302	95,017	17,311	112,328	116,809	22,000	3,654	40,941	.....	4,497	91,954	25,285
Louisiana Ry. & Navigation Co.....	342	135,115	27,212	162,327	171,658	25,371	6,881	64,869	.....	7,246	129,359	14,500
Louisiana Western.....	208	209,322	57,431	266,753	28,197	34,987	7,708	62,883	1,801	8,471	143,890	138,840
Louisville & Nashville.....	5,070	4,385,248	1,174,078	5,559,326	783,263	1,087,201	131,238	2,168,644	24,678	125,769	4,304,248	1,365,513
Louisville, Henderson & St. Louis.....	200	185,870	16,011	201,881	25,313	16,895	5,017	99,444	.....	3,328	100,559	58,768
Maine Central.....	1,218	797,340	275,771	1,073,111	16,813	168,311	9,532	522,200	2,260	27,400	847,911	315,065
Michigan Central.....	1,862	2,937,371	929,904	3,867,275	461,743	645,465	65,467	1,874,897	62,299	86,300	3,190,334	1,179,114
Mineral Range.....	120	94,486	2,952	97,438	19,714	18,558	428	69,588	.....	1,096	109,388	12,761
Minneapolis & St. Louis.....	1,647	675,879	145,467	821,346	88,529	127,514	17,037	382,431	89	20,766	633,570	247,959
Minneapolis, St. Paul & Sault Ste. Marie.....	4,228	2,087,566	518,282	2,605,848	317,996	403,166	53,741	1,055,790	16,332	59,165	1,900,688	909,836
Missouri & North Arkansas.....	365	72,655	29,598	102,253	112,188	15,717	3,649	49,287	245	6,518	92,628	19,560
Missouri, Kansas & Texas System.....	3,865	2,183,695	645,555	2,829,250	598,917	601,949	68,625	1,143,940	19,933	97,466	2,530,761	529,770
Missouri, Oklahoma & Gulf.....	334	115,830	20,556	136,386	25,119	34,987	4,596	65,555	313	7,374	122,193	20,757
Missouri, Oklahoma & Gulf of Texas.....	134	17,913	176	18,090	3,340	2,212	1,540	18,733	.....	1,693	18,733	540
Missouri Pacific.....	3,756	2,160,315	393,201	2,553,516	449,813	430,727	69,793	1,003,621	8,293	60,833	2,011,998	746,223
Mobile & Ohio.....	1,160	900,893	120,238	1,021,131	111,528	270,400	35,437	369,418	2,822	31,514	821,128	256,361
Monongahela.....	108	158,631	13,089	171,720	31,327	13,172	829	50,397	.....	4,027	99,753	75,030
Monongahela Connecting.....	6	418,309	96,945	515,254	25,427	23,853	333	116,616	.....	3,338	170,058	6,704
Morgan's La. & Tex. R. & S. S. Co.....	401	549,707	96,945	646,652	54,381	71,564	11,717	157,956	2,186	15,255	312,875	236,832
Nashville, Chattanooga & St. Louis.....	1,237	889,639	236,234	1,125,873	115,180	224,241	56,773	485,949	9,986	33,734	925,509	304,067
Nevada Northern.....	165	178,836	15,243	194,079	16,543	20,990	740	39,360	74	5,274	82,980	116,666
New Orleans & North Eastern.....	204	283,775	59,053	342,828	30,532	70,634	10,173	106,243	1,027	11,424	230,634	139,969
New Orleans Great Northern.....	285	85,250	26,390	111,640	15,430	20,773	3,129	41,377	129	6,606	87,443	31,261
New Orleans, Texas & Mexico.....	191	79,662	20,865	100,527	16,320	16,456	4,516	26,554	.....	8,671	72,517	30,798
New York Central.....	6,083	11,983,023	4,302,270	16,285,293	1,913,059	3,376,253	242,218	7,791,725	273,520	438,108	14,034,882	4,868,668
New York, Chicago & St. Louis.....	570	1,275,971	89,335	1,365,306	110,521	206,604	46,443	669,867	4,689	37,299	1,069,956	353,471
New York, New Haven & Hartford.....	1,997	3,459,536	2,668,405	6,127,941	663,171	861,967	37,129	2,875,309	103,164	182,039	4,721,147	2,825,445
New York, Ontario & Western.....	568	458,937	93,678	552,615	68,680	67,372	7,887	286,160	.....	19,907	500,131	168,549
New York, Philadelphia & Norfolk.....	112	290,028	57,566	347,594	54,720	85,040	5,222	153,036	6,548	14,530	319,091	68,417
New York, Susquehanna & Western.....	135	181,164	49,501	230,665	23,283	34,670	2,293	143,474	.....	6,048	209,932	47,898
Norfolk & Western.....	2,085	4,406,361	494,122	4,900,483	539,228	1,007,347	60,776	1,542,544	10,178	87,689	3,238,072	1,839,025
Norfolk Southern.....	908	332,449	87,257	419,706	57,491	69,138	8,670	149,236	105	22,299	306,938	15,015
Northern Pacific.....	6,513	5,897,335	1,169,795	7,067,130	1,193,070	825,827	108,681	2,271,622	102,409	135,474	4,545,793	3,136,668
Northwestern Pacific.....	307	154,668	147,996	302,664	73,080	46,940	5,085	123,408	807	9,943	258,672	88,659
Oregon Short Line.....	2,307	2,014,903	451,624	2,466,527	295,751	270,320	34,332	674,031	39,434	79,358	1,393,227	169,410
Oregon-Washington R. R. & Nav. Co.....	2,052	1,271,329	402,848	1,674,177	167,982	177,982	47,743	486,805	21,431	80,046	1,066,002	757,342
Panhandle & Santa Fe.....	670	466,915	85,730	552,645	77,525	108,092	6,004	159,836	.....	15,469	365,107	207,583
Pennsylvania Company.....	1,755	4,336,939	1,095,176	5,432,115	769,230	1,146,422	85,214	2,652,685	46,103	159,796	4,857,585	1,193,156
Pennsylvania Railroad.....	4,536	14,577,049	4,088,396	18,665,445	2,550,396	4,289,102	213,454	8,181,135	325,837	520,933	16,048,532	4,698,532
Pennsylvania Union.....	19	13,668	5,713	19,381	11,096	94,724	102	60,594	.....	3,920	90,266	4,458
Philadelphia & Reading.....	1,127	4,261,528	603,727	4,865,255	308,869	970,800	47,903	2,204,743	13,878	81,015	3,625,760	1,550,480
Philadelphia, Baltimore & Washington.....	718	1,200,077	182,029	1,382,106	332,507	482,039	30,745	999,998	2,211	65,289	1,908,426	637,879
Pittsburgh & Lake Erie.....	225	1,428,757	182,029	1,610,786	258,257	386,134	16,304	653,871	5,773	37,418	1,357,757	457,169

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF APRIL, 1917—CONTINUED

Name of road.	Average mileage operated during period.	Operating revenues			Operating expenses				Net from railway operation.	Railway tax accruals.	Operating income (or loss).	Increase (or decr.) comp. with last year.			
		Freight.	Passenger.	Total (inc. misc.).	Maintenance of way and structures.	Equip-ment.	Traffic.	Trans- portation.					Miscel- laneous.	General.	Total.
Pittsburgh & West Va.....	63	\$89,179	\$9,028	\$106,930	\$12,931	\$17,879	\$1,686	\$39,146	\$3,466	\$6,196	\$81,304	\$10,919	\$14,707	\$480,760	
Pittsburgh, Cincl., Chic. & St. Louis.....	2,399	4,495,057	1,045,288	6,225,933	630,112	1,223,824	96,716	2,434,129	50,613	137,256	4,572,767	212,144	1,440,806	65,129	
Pittsburgh, Shawmut & Northern.....	205	79,938	5,406	88,179	14,534	15,345	1,099	59,041	.....	4,049	130,067	1,776	43,664	26,917
Port Reading.....	21	121,999	6,206	140,249	6,006	12,210	39	78,909	.....	127	96,617	43,633	10,000	66,917
Richmond, Fredericksburg & Potomac.....	88	200,604	155,507	405,354	37,782	38,668	3,784	135,515	6,254	8,144	228,147	177,208	163,086	1,937	
Rutland.....	468	202,260	104,122	359,008	48,737	57,505	10,529	148,636	1,141	8,378	274,527	84,082	66,217	52,067	
St. Joseph & Grand Island.....	258	198,954	23,767	233,888	116,700	23,040	3,208	76,757	785	5,050	225,358	8,830	309	19,189	
St. Louis, Brownsville & Mexico.....	540	196,529	78,925	298,888	43,690	39,613	10,698	89,211	.....	9,617	189,326	109,561	101,561	64,891
St. Louis, Iron Mountain & Southern.....	3,339	2,549,708	654,693	3,395,536	545,821	620,643	74,495	954,763	12,253	64,160	2,667,193	167,900	959,785	263,446	
St. Louis, Merchant's Bridge Terminal.....	9	.....	.....	242,533	22,167	10,987	900	122,704	.....	6,869	163,626	7,517	71,390	27,459
St. Louis, San Francisco.....	4,752	2,947,844	1,140,742	4,371,808	537,521	711,054	64,349	1,528,062	.....	124,327	2,942,613	142,914	184,830	1,243,342
St. Louis, San Francisco & Texas.....	244	58,065	23,394	81,855	11,423	20,761	2,360	47,399	.....	6,149	88,092	1,491	7,728	5,704
St. Louis Southwestern.....	943	748,492	125,062	917,808	81,367	163,435	31,455	221,383	2,575	26,806	526,989	390,819	340,939	82,005	
St. Louis Southwestern of Texas.....	811	294,481	73,457	397,883	71,263	120,988	14,676	163,888	1,121	20,610	391,753	6,130	18,410	2,131	
San Antonio & Aransas Pass.....	726	208,931	63,271	294,147	67,971	48,207	7,624	160,732	.....	14,582	298,787	15,000	19,687	22,208
Seaboard.....	3,461	1,658,041	531,280	2,460,790	287,223	362,640	78,803	914,449	18,146	72,392	1,721,050	739,739	626,016	33,770	
Southern.....	6,983	4,967,873	1,530,258	7,168,560	795,037	1,122,307	177,071	2,454,670	48,772	178,692	4,762,638	2,405,922	318,691	2,084,279	
Southern in Mississippi.....	281	56,728	25,589	91,206	19,514	8,919	1,986	39,903	.....	4,044	74,366	16,840	10,546	3,890
Southern Pacific.....	7,079	7,523,774	2,653,995	11,197,547	1,178,519	1,515,596	170,256	3,872,418	173,404	261,917	7,146,327	4,051,220	3,470,095	559,303	
Spokane, Portland & Seattle.....	555	346,583	120,706	504,174	78,179	44,502	7,675	108,935	4,525	13,595	257,146	247,029	58,300	188,686	
Staten Island Rapid Transit Co.....	24	59,935	53,550	123,335	21,882	14,734	888	49,730	.....	4,836	92,071	33,265	27,265	12,855
Tennessee Central.....	295	103,559	31,664	144,682	20,956	20,359	2,726	50,525	.....	8,316	102,881	41,801	4,800	7,068
Terminal R. R. Ass'n of St. Louis.....	37	.....	.....	280,945	30,854	13,330	950	84,060	1,972	4,787	135,954	144,991	30,417	114,574
Texas & New Orleans.....	468	360,645	101,318	498,760	50,379	80,896	8,438	172,989	10,544	10,732	333,602	165,157	19,788	145,054	
Texas & Pacific.....	1,946	1,187,216	424,122	1,724,977	218,359	242,793	40,093	751,459	11,893	57,119	1,318,309	406,668	80,000	326,213	
Toledo & Ohio Central.....	436	466,118	46,637	543,708	88,805	127,506	7,205	242,010	1,702	19,384	452,605	91,102	24,729	66,388	
Toledo, Peoria & Western.....	248	59,595	33,406	90,738	19,986	27,706	2,058	39,425	.....	4,592	93,766	5,971	7,500	693
Toledo, St. Louis & Western.....	451	533,668	27,978	586,222	78,526	76,157	16,811	207,004	.....	8,644	387,116	199,105	20,000	178,910
Trinity & Brazos Valley.....	369	56,336	8,592	70,142	29,368	29,368	3,128	35,813	.....	7,591	100,584	30,441	5,160	35,601
Ulster & Delaware.....	129	45,748	18,607	78,119	9,497	11,450	1,069	32,829	.....	3,353	58,495	19,625	4,000	15,656
Union Pacific.....	3,622	4,555,766	963,670	6,136,288	908,075	747,466	113,250	1,669,234	118,324	171,620	3,705,517	2,430,770	2,005,000	57,508	
Union R. R. of Baltimore.....	8	146,775	37,136	186,156	8,747	7,140	.....	7,140	.....	2,261	18,149	168,006	7,361	160,645
Union R. R. of Pennsylvania.....	31	.....	.....	424,043	20,008	14,123	135	263,500	.....	5,460	432,064	8,021	7,335	15,357
Vicksburg, Shreveport & Pacific.....	171	98,782	40,502	156,341	20,015	13,030	4,520	48,057	1,639	4,973	114,234	42,107	10,350	31,757	
Virginian.....	513	717,091	43,200	805,837	62,067	115,496	5,809	236,182	14,323	15,316	448,603	357,234	39,000	318,217	
Wabash.....	2,519	2,527,689	560,334	3,376,333	327,791	381,839	105,079	1,353,727	18,796	78,232	2,263,167	1,113,166	102,199	1,010,453	
Washington Southern.....	36	68,903	91,450	206,120	16,064	20,488	1,394	70,840	2,749	3,727	115,262	90,858	8,289	82,567	
West Jersey & Seashore.....	359	214,446	360,416	628,512	115,429	100,767	11,309	284,238	3,793	18,128	533,637	94,875	39,584	55,276	
Western Maryland.....	775	884,162	84,485	1,038,462	119,115	227,962	21,634	391,493	10,467	28,628	799,233	329,229	36,500	202,729	
Western Pacific.....	958	631,932	140,743	801,251	128,979	69,499	21,157	213,941	11,419	20,129	458,014	343,237	64,217	278,989	
Western Ry. of Alabama.....	133	72,273	39,822	125,868	15,002	20,937	6,711	42,322	2,330	5,183	98,676	27,192	6,550	21,042	
Wheeling & Lake Erie.....	512	631,244	54,530	740,502	111,196	103,782	10,119	276,420	2,562	3,706	534,312	216,190	44,537	171,653	
Yazoo & Mississippi Valley.....	1,382	996,516	239,811	1,307,949	255,749	233,325	20,263	407,441	2,506	36,389	949,041	358,908	171,983	186,633	
FOUR MONTHS OF CALENDAR YEAR, 1917															
Alabama & Vicksburg.....	143	\$434,156	\$137,682	\$633,504	\$81,804	\$114,206	\$19,483	\$222,852	\$6,581	\$25,190	\$470,116	\$163,388	\$39,900	\$123,487	\$28,699
Alabama Great Southern.....	312	1,444,571	447,394	2,061,477	259,073	426,550	68,113	632,206	9,830	46,551	1,442,322	619,155	80,117	539,011	11,927
Ann Arbor.....	294	675,909	156,443	885,588	74,869	160,083	21,515	450,632	1,455	33,689	742,243	143,345	52,400	90,831	131,729
Arizona Eastern.....	378	1,267,960	211,490	1,579,692	192,294	137,777	11,016	339,889	25,062	55,357	760,454	819,238	81,495	737,610	343,260
Atchafalaya, Topeka & Santa Fe.....	8,649	30,608,823	9,482,932	43,534,801	4,483,601	7,321,193	764,857	13,697,116	146,110	896,782	27,173,337	16,361,464	2,079,842	14,277,120	2,788,856
Atlanta & West Point.....	93	277,174	185,953	531,567	57,609	89,767	28,476	176,023	10,353	19,763	381,990	149,577	28,930	120,518	16,494
Atlanta, Birmingham & Atlantic.....	640	1,006,134	178,657	1,278,034	169,855	198,860	61,909	557,110	168	46,074	1,033,978	244,057	54,800	189,250	62,549
Atlantic & St. Lawrence.....	167	536,539	79,677	678,160	136,215	109,840	16,691	499,123	28,591	790,458	112,298	42,884	155,182	327,491
Atlantic City.....	170	304,323	285,065	634,750	96,863	71,152	13,340	421,601	393	2,821	607,902	26,848	40,000	13,244	6,739
Atlantic Coast Line.....	4,777	9,746,857	4,160,773	15,167,620	1,598,301	2,192,371	265,810	4,928,111	81,483	319,904	9,374,038	5,793,582	739,000	5,051,591	420,699
Baltimore & Ohio.....	4,545	30,115,254	5,109,202	38,424,318	4,028,785	7,796,699	755,319	16,173,023	270,731	998,318	30,017,518	8,406,803	1,355,648	7,048,265	247,025
Baltimore & Ohio Chicago Terminal.....	79	1,805	1,805	49,352	117,778	3,990	454,712	6,035	25,630	635,846	32,081	92,006	124,522	139,132
Baltimore, Chesapeake & Atlantic.....	88	179,226	73,842	266,706	25,009	50,498	4,750	172,912	.....	11,062				

Traffic News

The traffic department of the Central of Georgia estimates that the growers of watermelons in Georgia will, this year, ship about 10,000 carloads. The acreage is 29,194, which is considerably more land than was planted last year. Less than one-half these melons will be shipped from stations on the lines of the Central.

The total number of freight cars moved over the Middle division of the Pennsylvania Railroad in the month of May was 200,378, as compared with 185,592 cars in April, and 191,527 in May of last year. The largest monthly movement on record is that of March, 1916, when the number was 211,370. In the month just closed, the number of loaded cars moved eastward was 89,513, and westward 26,201.

Miss Avis Lobdell, an agent of the passenger department of the Oregon-Washington Railroad & Navigation Company, on Tuesday, May 15, gave an address before students of the University of Oregon, discussing journalism and "intelligent travel." Miss Lobdell is one of the five women passenger agents in the world. She gave practical demonstrations of how to read a railroad ticket, how to decipher time tables, and how to use the two together, and offered advice as to the correct and incorrect sources of information when traveling; the protection railroads afford their patrons, and many details that if used intelligently would make travel more comfortable.

Reductions in Passenger Service

In line with the suggestion of the Railroad War Board to curtail passenger service for the purpose of handling the expected volume of war traffic with the greatest efficiency, the Baltimore & Ohio has announced a revision of passenger service throughout its lines, which eliminate a number of local runs throughout the system, and change the time of many through trains. A list of changes, printed in passenger department bulletin No. 23, fills no less than eight pages. Train No. 1 from New York to St. Louis leaves New York at noon, two hours later than formerly, and arrives at St. Louis at the same time as heretofore. Train No. 20, formerly leaving Washington for Philadelphia at 8 p. m., has been discontinued beyond Baltimore. Train No. 21 from Buffalo to Washington, and train No. 22 from Washington to Buffalo will be discontinued north of Philadelphia.

A list of the through trains shows the elimination of the "West Virginian" only, but the list of local trains shows the elimination of 7 trains on the Philadelphia division; 10 on the Baltimore division; 3 on the Cumberland division; 4 on the Monongah division; 4 on the Wheeling division; 9 on the Connellsville division; 6 on the Pittsburgh division; 10 on the Newark division, and on the Southwest district, one each on the Ohio, Indiana and Illinois divisions, and 3 on the Illinois division.

The New York, New Haven & Hartford, which a few days ago announced that it would eliminate about 200 trains from its summer schedules, last week issued a list of the trains which will be dropped. The eliminations take effect June 25, and include almost entirely local runs on suburban schedules, and longer but relatively unimportant runs on main and branch lines. All Sunday trains between Boston and Dedham, and between Needham Junction and Newton Highlands, are taken off.

At a conference of executive officers of the railways in southern states, called recently to meet in Atlanta by W. J. Harahan, president of the Seaboard Air Line and chairman of the southeastern department of the railways' War Board, the policy was adopted of reducing passenger service, either through elimination or consolidation, and utilizing the engines, men and coal thus released for the more important service of the government. This policy, it was announced, will be observed by the roads co-operatively, with every possible effort to avoid inconvenience to the public. Plans were outlined to ask the co-operation of shippers in loading cars to full capacity, and releasing them as promptly as possible. A committee of five will be appointed to visit the railroad commissions of the different states, and acquaint all state authorities with the facts as to what the railroads are trying to do for the success of the war.

Commission and Court News

INTERSTATE COMMERCE COMMISSION

The commission has announced a hearing in connection with its tentative valuation of railroad properties at Washington on Monday, June 18, before Commissioner Clements. W. B. Storey, vice-president of the Atchison, Topeka & Santa Fe, and D. F. Crawford, general manager of the Pennsylvania Lines, will testify on the subject of depreciation.

The commission has announced an informal conference to be held in Washington on June 22 to consider certain suggested changes in its tariff circular No. 18-A, relating to the rules governing the construction and filing of freight tariffs and classifications. Carriers, shippers' organizations and state commissions are invited to be represented and the commission has published a docket of the principal proposed changes to be considered.

The commission has canceled the note to paragraph 4 of its regulations governing the transportation of explosives and dangerous articles by express, adopted May 28, and has adopted as a substitute a note providing that upon presentation to an agent of an express carrier, a declaration from the senior officer at a military or naval headquarters that an emergency exists which requires the transportation by express, by or for the war or navy departments, of war supplies of an explosive nature, the carrier during the war may authorize its agent to accept such articles when packed, marked and described as required by the regulations for the transportation of explosives by freight. This permission is given on the assumption that great care will be used not to subject railway passengers and the public to the dangers incident to the transportation of these explosive articles in passenger trains when the interests of the government can be met by freight shipments.

The Alaska Investigation

Opinion by Commissioner Clark:

Respondents' rates, regulations and practices governing transportation between points within Alaska and between points in the United States and points in Alaska, are not found unreasonable. Special contract rates accorded cannery and mining companies on through rail-and-water shipments from points in the United States to points in Alaska, are found unjustly discriminatory. Allegations concerning the payment of rebates and the ownership by respondent railroads or their interest in mines or in minerals which they transport are found not sustained. (44 I. C. C., 680.)

The commission's report contains considerable information of value relative to the transportation lines of Alaska and the peculiar operating conditions they have to meet.

Prior to the discoveries of gold along the Yukon and tributary rivers, a few steamers and sailing vessels, operated irregularly under charter, sufficed to accommodate the small amount of traffic offered, consisting principally of military supplies, supplies for trading posts and fisheries, and outbound cargoes of furs and fish. Since then the business of transportation has grown in importance, keeping pace with the increase in population and the development of the mining, fishing and other industries. Alaska now has approximately 500 miles of railway in nine disconnected systems, regular steamship service during the season of navigation on its 5,000 miles of principal navigable rivers, and many steamship lines operate regularly on fixed schedules between its ports and the United States and Canada.

Although possessed of great natural resources, Alaska is still largely an undeveloped and sparsely inhabited region with but little traffic in proportion to its area, which is about one-fifth that of the United States. Its climate and topography interpose many and peculiar obstacles to the construction, operation and maintenance of transportation routes, and the conditions surrounding transportation are without exact counterpart in other parts of the United States. Coastwise navigation is rendered difficult and oftentimes perilous by violent storms, adverse tides, floating ice and dense fogs; by narrow and tortuous channels which are in-

adequately buoyed and lighted; and by uncharted reefs and pinnacle rocks. The harbors as far west as Cook Inlet are open throughout the year, but those to the westward and the rivers which form practically the sole highways of interior communication are icebound except in summer. Transportation between the Pacific Coast of the United States and the principal towns and settlements of the interior situated along the Yukon and tributary rivers involves an ocean and river voyage of several thousand miles by way of the Bering Sea or an intermediate inland movement over railroads, wagon roads, or trails which cross the lofty mountain ranges fringing the coast from British Columbia to the Alaska peninsula and connect the ice-free harbors of southern Alaska with the navigable waters of the Yukon basin. The rail portions of these inland routes are formed by the Alaska Northern, the Copper River & Northwestern and the rail lines of the White Pass & Yukon Route, with southern termini at Seward, Cordova and Skagway, respectively. The Alaska Northern, which is owned by the United States, is not involved in this proceeding.

Traffic between the United States and Alaska usually moves through Seattle or other ports on Puget Sound, and by far the greater portion is an all-water business over which the commission has no jurisdiction. Except that with points on the Copper River & Northwestern practically all traffic with interior Alaska moves partly by rail and partly by water via Skagway or over the all-water route via St. Michael on Bering Sea.

The Alaska Steamship Company, the Pacific Steamship Company, the Border Line Transportation Company, the Humboldt Steamship Company, the Canadian Pacific Railway Company's steamship lines, and the Grand Trunk Pacific Steamship Company, Limited, serve southeastern Alaska, which embraces the coastal section between Dixon Entrance and Cape Spencer. Only the first-named two companies operate regularly to southwestern Alaska lying between Cape Spencer and Unimak Pass, and to western Alaska, which includes ports on Bristol Bay and Bering Sea. The Pacific Steamship Company is the successor of the Pacific Coast Steamship Company and Pacific-Alaska Navigation Company, which, until November 1, 1916, operated over the routes now served by the Pacific Steamship Company. It and the Alaska Steamship Company have large and well-equipped fleets and are the principal ocean carriers serving Alaska. The vessels of the Pacific-Alaska Navigation Company, which, prior to 1914, was a non-operating company, and those of the Pacific Coast Steamship Company, plied between Puget Sound and California, as well as between Puget Sound and Alaska. The Border Line Transportation Company entered the Alaska trade in 1915 and operates between Puget Sound and British Columbia and Alaska. The Alaska Steamship Company and the Humboldt Steamship Company are engaged exclusively in the transportation of Alaska traffic.

The Copper River & Northwestern extends from Cordova to Kennecott, Alaska, a distance of approximately 196 miles. Construction began in 1906, and the road was completed for operation in April, 1911. In the beginning an attempt was made to build a line northward from Valdez. Later, Katalla was selected as the southern terminus, but after large expenditures for line construction, terminal facilities and harbor improvements, both projects were abandoned and the road was built from Cordova. The line follows the valleys of the Copper and Chitina rivers and for the greater part of the first 50 miles it is laid on level swampy ground, which required extensive filling. Excepting a comparatively few miles where its line rests on flats and dead glaciers, a great deal of heavy rock work was encountered in constructing the road. It is a standard-gage well-built road with a number of tunnels and expensive steel bridges designed to accommodate the heaviest class of traffic. There are but few sharp curves and with two or three unimportant exceptions the maximum gradients do not exceed 1 per cent. It has an ample supply of motive power, cars and work equipment, and terminal facilities at Cordova, which include a large and substantial wharf and a number of warehouses, shops and other structures. A tri-weekly mixed freight and passenger train service is maintained and additional freight trains are operated as occasion requires.

The rail lines of the White Pass & Yukon Route extend from Skagway, on Lynn Canal, to White Horse, Yukon Territory, the head of navigation on the Yukon River, a distance of about 110 miles. Construction began in 1898, following the discovery of gold in the Klondyke region, and was completed in 1901. These are substantially built narrow-gage lines, with many sharp curves

and steep grades. Wharves, shops, warehouses, ore bunkers and other terminal facilities are maintained at Skagway, and the lines are adequately equipped with rolling stock.

The American-Yukon Navigation Company owns and operates a line of steamers on the Yukon and tributary rivers between Dawson and St. Michael. While technically not a part of the White Pass & Yukon Route, it is owned by the same interests, has the same general officers, and is under the same management and control. It owns a large number of steamers, barges, wharves and other terminal facilities and maintains regular service during the season of navigation. It participates in joint all-water rates with the ocean steamship lines via St. Michael, and also in joint rail-and-water rates via Skagway.

The attack in this case is upon respondents' rate schedules as a whole. The record, however, deals principally (1) with traffic originating at points in the United States moving by rail to Seattle and thence by steamers to ports in southeastern or southwestern Alaska; (2) with traffic originating at Seattle or beyond, destined to points on the Copper River & Northwestern via Cordova, or to points on the Yukon and tributary rivers via Skagway; and (3) with copper ore shipped from mines served by the Copper River & Northwestern to smelters at Tacoma, Wash.

Respondents admit that the general level of their rates is higher than that prevailing in the United States, but contend that the disparity is fully justified by the adverse conditions surrounding transportation along the Alaska coast and within Alaska, some of which have been briefly noted. The traffic of the ocean carriers is essentially a one-way seasonal traffic in which full cargoes are the exception rather than the rule. It is estimated that the yearly traffic amounts to less than 50 per cent of the carrying capacity of the steamers engaged in the Alaska trade. Delays attributable to difficulties of navigation largely increase the cost of transportation, as the expense of operating a steamer amounts to several hundred dollars per day. All labor costs are high, the wages of crews, for example, being about 13 per cent higher than are paid by steamship companies operating along the Atlantic coast. Insurance rates range from 10 to 16 per cent of the value of the vessels and are three or four times higher than are paid by steamers operating on the California route or along the Atlantic coast.

The railroads emphasize the great cost of constructing, maintaining and operating their lines because of the climate and topography of the regions which they traverse and of their remoteness from the source of supplies. Extreme cold, heavy snowfall and high winds impede operation in winter and substantially increase the expense. Not infrequently their lines are blocked and roadways and bridges are destroyed or seriously damaged by earth, rock or snow slides, by floods, and by the shifting channels of glacial streams. Except during the four months' season of river navigation they handle little traffic other than southbound shipments of copper ore. To move practically a whole year's traffic within this short period necessitates a considerable expenditure for equipment which remains idle the greater portion of the year. All construction material, fuel and other supplies must be obtained from Seattle or other distant points, and having no rail connections to which they can look for assistance in emergencies they must not only be fully equipped with locomotives and cars, but must also keep on hand large quantities of material and supplies and maintain shops fitted for all repair work that may be required. The wages of employees are about 100 per cent higher than the average wage for similar employment in the United States. All but a small portion of their traffic consists of copper ore and supplies for those engaged in or dependent upon mining. Because of the diminishing importance and the introduction of improved methods of placer gold mining on the Yukon and tributary streams, the population of the interior and the traffic also have gradually decreased. The population of Dawson and vicinity, formerly about 35,000, is now less than 3,500. That of Skagway and many other once populous settlements has similarly decreased, so that the rail-and-water lines of the White Pass & Yukon Route and the American-Yukon Navigation Company, about 4,000 miles in length, now serve not more than 18,000 white inhabitants.

Respondents contend that these conditions, the uncertain future of the mining industry, and their failure in the past to realize a proper return upon their investment amply demonstrate that the present rates are not excessive and that they cannot justly be reduced. 44 I. C. C. 660

STATE COMMISSIONS

The Railroad Commission of Louisiana has revoked its order, issued last February, imposing a fine of \$5,000 on the Texas & Pacific for violating an order of the commission, which had been issued in 1913, requiring the installation of the block system. The commission had begun proceedings in court to enforce its order, but afterwards found out that the order had been complied with.

The Railroad Commission of Louisiana has authorized tariffs of increased rates of demurrage on freight cars to correspond with the rates now in force on interstate shipments, the new rates to take effect June 10. The "average agreement" is continued in force. The commission requires that the tariffs shall expire by limitation on May 1, 1918.

The Virginia State Corporation Commission has refused the request of the Tidewater & Western for leave to dissolve because of the impossibility of conducting business at a profit. The railroad company proposes to take the question to the Supreme Court of the state.

PERSONNEL OF COMMISSIONS

Charles A. Nelson, heretofore with the Delaware & Hudson Company, has been appointed junior railway mechanical engineer in the division of valuation of the Interstate Commerce Commission, Eastern district, with office at Washington, D. C.

COURT NEWS

Effect of Attempt to Defraud Company

A theatrical manager leased from a railroad two baggage cars solely for the transportation of theatrical effects, and placed therein his trunk, with his personal effects of unusual value, not falling within the description of theatrical effects. The New York Appellate Division holds that he could not recover for the loss of part of the contents of the trunk though it resulted from the road's negligence, having been guilty of an attempt to defraud the road.—*McKeon v. N. Y. N. H. & H.*, 164 N. Y. Supp., 312. Decided April 5, 1917.

Concealed Damage to Freight

Action was brought for the breaking of a machine designed to set lacing hooks automatically in leather and fabrics. The railroad received a box strongly made and weighing about 200 lb. from a warehouseman, the contents being described simply as a machine, the condition of which the railroad had no means of knowing. It delivered the box to a public truckman on its arrival at destination, and in the same order and condition in which it received it. It appeared that there was a defect in the machine, which the packer noticed when he boxed it, and this apparently slight defect may have been the cause of the breaking of the machine, either before it reached the railroad or after it left its custody. The New York Appellate Division held that it would be unjust to hold the railroad company liable under these facts, and judgment for the plaintiff was reversed.—*Stimpson Co. v. C. B. & Q.*, 164 N. Y. Supp., 68. Decided March 23, 1917.

Defect in Water Tank Not a Casualty Warranting Excessive Hours on Duty

The United States Circuit Court of Appeals, Sixth circuit, in a case against the Baltimore & Ohio, has decided in favor of the government in its claim that a telegrapher, also acting as pump man, could not rightly be held on duty more than the statutory period of time because of the pump arrangements being out of order. The operator at Sandyville, Ohio, on a cold night in January, 1914, found that, because of a hole in a pipe, he could not drain the tank connection and go home for the night according to his usual practice; and without draining the pipe it was necessary to keep the pump running, occasionally, all night in order to prevent freezing. He reported to the division superintendent, but he was not relieved until the next morning, and therefore was on duty nearly 24 hours. The court says:

1. The casualty proviso of section 3 of the Hours of Service Law applies to telegraphers as well as to other employees. The

"emergency" provision itself, of section 2, is one of the things superseded when the "casualty" happens.

2. "Casualty" and "unavoidable accident" are terms broad enough to cover many trifling things, yet their association in section 3 and their contrast with "emergency" in another section indicate that they were not used in any such broad sense, but only with reference to those extremer cases which justify coupling them up with "act of God."

3. Defect in pump of water tank relied on by carrier as a casualty to justify detention on duty of an employee who was telegrapher and station agent beyond the extended period of the "emergency" provision of the act, held not a "casualty," and, though an accident, no one can say it was unavoidable. It rather belonged, and distinctly so, in the class of "emergencies."

The decision, by Judge Denison, says that a man competent to attend the pump could have been sent by a special engine from Valley Junction, five miles away; or relief might have been secured from Canton, only 12 miles away. The court, therefore, affirms the decision of the lower court, the District Court of the Northern District of Ohio, Eastern division, which had directed a verdict in favor of the government. Decided May 8, 1917.

UNITED STATES SUPREME COURT

The United States Supreme Court on Monday, June 11, affirmed the decision of the Supreme Court of South Dakota, involving a conflict between the Interstate Commerce Commission, and the South Dakota Railroad Commission in which the state Supreme Court had enjoined the express companies from putting into effect rates in South Dakota prescribed by the Interstate Commerce Commission in order to remove discrimination against rates from points in Iowa to points in South Dakota. The Interstate Commerce Commission had prescribed rates between five points in South Dakota, which the express companies had taken as a basis for other rates within the state. The Supreme Court held that the injunction could not interfere with the valid order of the Interstate Commerce Commission, but that the express company, in its revised rates, went further than ordered by the Interstate Commerce Commission, thus sustaining the contention of the state authorities.

Limited Time for Notice of Claim Reasonable

The Supreme Court of the United States holds that the requirement of an interstate live-stock contract that a claim for damages should be presented within five days from the time the animals were removed from the cars is reasonable, and it was error to leave to the jury the question of its reasonableness.—*Erie v. Stone & Noble*. Decided June 4, 1917.

Original Bill of Lading Governs Shipment

In an action for injury to live stock passing over three roads, in which the Texas Court of Civil Appeals rendered judgment in favor of the initial carrier and against the other two, the latter on appeal claimed relief from liability because the shipper had not complied with a stipulation for thirty days' notice of claim contained in a second bill of lading issued by the second carrier. The bill of lading issued by the initial carrier contained no such requirement. The Supreme Court of the United States held that the bill of lading required to be issued by the initial carrier on an interstate shipment governs the entire transportation. The terms of the original bill of lading were not altered by the second. As the two connecting carriers were already bound to transport the cattle at the rate and on the terms named in the original bill of lading, the acceptance by the shipper of the second bill was without consideration, and was void.—*M. K. & T. v. Ward*. Decided June 4, 1917.

Georgia Whistling-Post Law

In holding the Georgia "blow-post" law invalid as applied to interstate trains because it is a direct burden on interstate commerce, in the case of *Seaboard Air Line v. Blackwell*, the United States Supreme Court bases its conclusion on the following facts alleged by the railroad. Between Atlanta and the Savannah river, the state boundary, a distance of 123 miles, there are 124 lawful grade crossings. In order to comply with the law the speed of a train would have to be so slackened that there would be practically a full stop at each of these crossings. The time

required for this purpose would depend on various conditions, such as the state of the weather and the percentage of grade; but it would not be less than three minutes for a train composed of an engine and three cars, and for a longer train the time would be greater—for an average freight train not less than five minutes. The schedule time of the train involved in the case, composed of an engine, mail car and two coaches, between Atlanta and the Savannah river was $4\frac{1}{2}$ hours. If the law had been complied with, the time consumed would have been more than $10\frac{1}{2}$ hours. For freight trains the time consumed would be more than 16 hours. Further time would be consumed by complying with the state law's requirement to come to a full stop 50 ft. from two crossings over the tracks of other railroads in existence between the two mentioned points.—Seaboard Air Line v. Blackwell. Decided June 4, 1917.

Rights of Way Through Forest Reservations

The Chicago, Milwaukee & St. Paul, in Idaho, by its general counsel, entered into an agreement with an officer of the Government Forest Service, reciting that it desired immediate permission to begin construction of its road over the Cœur d'Alene National Forest, and agreeing that it would execute a stipulation, to be prescribed by the government, "to be as nearly as practicable" like one previously executed by it relating to the Helena National Forest, Montana, as to prevention of forest fires, compensation for timber cut and damages for injury to the reserve, etc. The survey and plot of its right of way had not been approved by the Secretary of the Interior, but it was permitted to proceed with the construction of its road through the reservation. The company afterwards declined to execute the stipulation, and assented to an arrangement for further negotiations; or, if need be, a friendly lawsuit. Further negotiations failed, and a lawsuit followed. The Federal district court for the district of Idaho held that the railroad was bound by its counsel's agreement, which was based on a valuable consideration, and directed a stipulation to be entered into, and awarded damages in the aggregate of \$68,489 (207 Fed., 164). This was affirmed by the Circuit Court of Appeals (218 Fed., 288). The Supreme Court of the United States has now affirmed the decree.—C. M. & St. P. v. U. S. Decided June 4, 1917.

Discontinuance of Unprofitable Trains

The Supreme Court of the United States has affirmed the order of the Federal district court for the southern district of Mississippi enjoining the enforcement of orders of the Mississippi Railroad Commission requiring the Mobile & Ohio to restore to service six passenger trains—two each way daily between Meridian and Waynesboro, a town 52 miles to the south, and one train each way daily between Meridian and Okolona, a town of 127 miles to the north—all in Mississippi. The train between Meridian and Okolona, which was discontinued, was an interstate train; the others were local to the state. The evidence showed that the railroad, an important interstate carrier, was operating before the business depression incident to the war on a margin so narrow that the \$85,000 of profit for the entire preceding year would have been more than swallowed up in nine days by the shrinkage of business of the company as it was when this controversy arose; that without being able to meet its growing deficit the company had resorted to rigid economies of every sort before it discontinued these six trains, the continued operation of which would have involved a loss of \$10,000 a month; that the three daily trains each way to the north of Meridian which remained after the taking off of the trains, which gave rise to the controversy, could not be said to be inadequate to the needs of the comparatively small population to be served. Looking to the extent and productiveness of the business as a whole, the small traveling population to be served, the character and large expense of the service required by the orders, and to the serious financial conditions confronting the carrier, with the public loss and inconvenience which its financial failure would entail, the court concluded that the orders of the commission at the time and under the circumstances when issued were arbitrary and unreasonable, and in excess of the lawful powers of the commission; and that if enforced they would result in such depriving of the railroad of its property without due process of law as is forbidden by the Fourteenth Amendment.—Mississippi R. R. Com. v. Mobile & Ohio. Decided June 4, 1917.

Equipment and Supplies

LOCOMOTIVES

THE ALAN WOOD IRON & STEEL COMPANY, Philadelphia, Pa., has ordered 3 four-wheel locomotives from the Baldwin Locomotive Works.

THE RUSSIAN GOVERNMENT has ordered 68 additional six-wheel tank locomotives from the American Locomotive Company. These locomotives will have 11 by 16-in. cylinders, and a total weight of 45,000 lb. each.

THE SOUTH AFRICAN GOVERNMENT RAILWAYS have ordered 20 superheater Mountain type locomotives from the American Locomotive Company. These locomotives will have 22 by 26-in. cylinders, and a total weight in working order of 175,000 lb.

FREIGHT CARS

THE PEERLESS TRANSIT LINE recently ordered 60 tank cars from the American Car & Foundry Company.

THE ILLINOIS CENTRAL will build 75 caboose, 250 wooden box and 250 wooden stock cars in its own shops. Steel underframes and trucks for the caboose cars have been ordered from the Bettendorf Company.

UNITED STATES GOVERNMENT.—Negotiations are being actively continued relative to the purchase of 100,000 freight cars for the American railroads by the United States Government. A number of important officers of car building companies have been in conference at Washington now for some days. It is understood that the proposals to purchase equipment contemplate the construction of composite box and gondola cars, and that the cost will be about \$1,500 per car.

IRON AND STEEL

THE CHICAGO & NORTHWESTERN has ordered 300 tons of steel from the A. Bolters' Sons Company for boiler shop additions and alterations.

TRACK SPECIALTIES

THE MISSOURI, KANSAS & TEXAS has ordered 2,000 tons of tie plates from the Sellers Manufacturing Company for 1918 delivery.

SIGNALING

THE GRAND TRUNK has given a contract to the Union Switch & Signal Company for a 16-lever mechanical interlocking plant at Forest avenue, Detroit. The construction forces of the railroad will install the apparatus.

THE MISSOURI, KANSAS & TEXAS is to install a mechanical interlocking plant at Clinton, Mo., a 24-lever Saxby & Farmer machine having 18 working levers. The material will be furnished by the Union Switch & Signal Company. The distant signals will be electric, low voltage d. c.

THE INTERBOROUGH RAPID TRANSIT COMPANY, New York city, has awarded the Union Switch & Signal Company a series of contracts to provide interlocking and automatic block signals for the Seventh Avenue Subway from West Forty-third street to Wall street, about three miles; the final part of the West Farms Subway connection, and the Pelham Bay Parkway line from Park avenue and East 135th street to Pelham Bay Park, about three miles. The interlockings will be electro-pneumatic. Electro-pneumatic automatic train stops will be used throughout. The Seventh Avenue Subway will have seven interlockings aggregating 105 levers. The Pelham Bay Parkway Line includes one 19-lever, two 15-lever and three 11-lever interlocking machines.

Supply Trade News

James M. Johnson, treasurer of James B. Clow & Sons, died at his home in Chicago on June 10.

Jack Coughlin, treasurer of the Railway Motor Company of America, died at his home in Chicago on June 7.

The Illinois Steel Company, Chicago, Ill., announces the appointment of C. H. Rhodes, of the Canadian Steel Company, as purchasing agent, succeeding J. C. Hoot.

The Lincoln Electric Company, Cleveland, Ohio, announces that it has appointed as its Indianapolis representatives the Ross Power Equipment Company, 617 Merchants' Bank building, Indianapolis, Ind.

Charles H. McCormick, for a number of years connected with the Standard Heat & Ventilation Company, has been appointed special sales agent for the National Railway Appliance Company, at 50 East Forty-second street, New York.

James H. Slawson, whose election to the position of vice-president of the Joliet Railway Supply Company, with headquarters at Chicago, Illinois, was announced in



J. H. Slawson

this column last week, was born at Cleveland, Ohio, and entered railway service in 1890 with the Lake Shore & Michigan Southern in the same city. He was successively employed in the office of the assistant general freight agent, in the revision department, the tariff bureau, the auditing department and the office of the chief engineer. In 1902, he was employed by the National Malleable Castings Company at the Sharon (Pa.) plant with special railroad duties. He was later made chief clerk, following which he was promoted to local treasurer in charge of the business affairs of the Sharon plant. In 1912, he was transferred to Chicago where he has been sales agent up to the present time. The Joliet Railway Supply Company, of which he becomes vice-president, is a subsidiary of the Northwestern Malleable Iron Company of Milwaukee, Wis.

C. A. Newman, formerly manager of sales promotion for Henion & Hubbell, Chicago, wholesalers in power pumps, mining and mill supplies, has been made sales manager of the Boiler-Kote Company, with general sales offices in the Fisher building, Chicago.

Robert Parks, general manager of the Bettendorf Company, Bettendorf, Iowa, has resigned to become connected with the Canadian Car & Foundry Company. It is reported that the Canadian Car & Foundry Company will open their Ft. William (Ont.) plant shortly.

Arthur M. Torrey, formerly with W. S. Barstow & Company, Inc., has left that organization to re-enter the employ of Hildreth & Co., inspection engineers, 15 Broad street, New York, with which firm he was connected for several years prior to joining the Barstow force.

The Pittsburgh-Des Moines Steel Company, Pittsburgh, Pa., has recently established a new Canadian branch at Chatham, Ont., which is completely equipped to manufacture and erect structural steel and plate work of all kinds, including mill buildings, office buildings, bridges, wireless towers, etc. In addition to this they will make a specialty here, as in the United States, of the manu-

facture and erection of elevated steel tanks. They will also carry a large stock of material for immediate fabrication or delivery.

Thomas Berry, one of the founders of the firm of Berry Brothers, varnish manufacturers, Detroit, Mich., died at his home in that city on May 24. Mr. Berry was born in Sussex, England, February 7, 1829, and came to Detroit in 1856 with his two brothers, with whom he established the firm which bears his name in 1858. He maintained an active interest in the business until shortly before his death.

John C. Bridgman, general manager of the Hazard Manufacturing Company, died suddenly at his home at Wilkes-Barre, Pa., on May 28. Death was due to heart trouble. He was born at Northampton, Mass., 55 years ago. He became sales agent for the Hazard Manufacturing Company in 1888, and was later promoted to secretary. In 1897 he was appointed general manager, the position he held until his death.

The New York offices of the General Electric Company will be moved on June 16 from 30 Church street to the Equitable building, 120 Broadway. The entire twentieth floor of the building has been especially arranged and furnished for the General Electric Company. Inasmuch as this removal to new offices is made in the 25th year of the company's history, it is interesting to note that in that time its business has increased from about ten millions in gross sales the first year of its organization to gross orders of \$167,169,000 during the 25th year, and its sales offices have naturally increased in number and in importance. The company's offices in New York are the largest and most important among its district offices.

Steel Corporation Declares Extra Dividend for Red Cross

The board of directors of the United States Steel Corporation at a special meeting Tuesday, declared an extra dividend of 1 per cent on the common stock payable July 28. This dividend was declared in response to the request of many stockholders to declare an extra dividend to enable them to contribute to the large fund which it is sought to obtain for Red Cross army purposes, under the auspices of the American National Red Cross.

The dividend checks will be sent to stockholders with a statement of the circumstances which influenced the action of the board and the disposition of the dividend will be left entirely with the stockholders in accordance with their interests and patriotic instincts.

E. H. Gary, chairman of the board of directors, also announces that the board adopted a resolution declaring that it was the sense of the directors that on the regular dividend period on the last Tuesday in July there be declared a dividend of 1¼ per cent on the preferred stock, a dividend of 1¼ per cent on the common stock and an extra dividend of 3 per cent on the common stock. The special dividend will amount to \$5,803,028. It is expected that other large companies will also declare similar extra dividends to enable their stockholders to assist in raising the Red Cross Fund of \$100,000,000.

TRADE PUBLICATIONS

FREIGHT CAR APPLIANCES.—Catalogues Nos. 10, 20 and 30, recently issued by the Wine Railway Appliance Company, Toledo, Ohio, deal respectively with that company's steel ladders, car ventilating shutters and the Wine self-centering roller side bearing. Each booklet is well illustrated with views of the appliances, plans showing their installation and views of cars on which they have been applied.

AUTOMATIC CUT-OFF VALVES.—Catalogue N-4, recently issued by the Lagonda Manufacturing Company, Springfield, Ohio, describes in detail the different classes of Lagonda automatic valves, showing these valves arranged for installation in different positions. Sectional views are shown of four classes of valves, and full information regarding the operation of the valves is given, as well as dimensions and specifications. A number of installations of Lagonda valves are illustrated. A discussion of the need of automatic valves is given by way of introduction, featuring recommendations of insurance companies and U. S. government tests on Lagonda valves.

Railway Construction

ATCHISON, TOPEKA & SANTA FE.—This company has completed plans for an employees' clubhouse at Shopton, Ia. It will be two stories high, 36 ft. by 123 ft. of brick veneer, with tile tar and gravel roof, and will have sleeping porches and shower baths. The approximate cost of the improvement will be \$40,000.

Plans are being made by this company to build a storage and unclaimed freight building at Topeka, Kan. It will be three stories high, 102 ft. by 262 ft., of reinforced concrete, with brick face, and will be equipped with elevators. The approximate cost is \$250,000.

CHICAGO, BURLINGTON & QUINCY.—This company has let a contract to the Van Sant Construction Company, Kansas City, Mo., for the construction of a one-story brick freight house, 32 by 506 ft., at Kansas City.

CHICAGO, FOX LAKE & NORTHERN (ELECTRIC).—This company will construct a line from Evanston, Ill., to Palatine, via Niles Center, Park Ridge and Arlington Heights, 20 miles. The road will take over the Palatine, Lake Zurich and Wauconda, operating a steam line from Palatine to Wauconda. From Wauconda a new road will be built to extend north to Volo, Fox Lake, Antioch and Lake Geneva, Wis., then west and north to Elkhorn and Jefferson, a total distance of 45 miles.

CHICAGO, MILWAUKEE & ST. PAUL.—This company has completed a survey for a line between New England, N. D., and Amidon. Construction work will not be started until after the conclusion of the war.

CHICAGO & NORTH WESTERN.—This road has completed preliminary plans for an eight-mile connecting line between the Madison (Wis.) and Sparta lines, east of West Allis. Construction will not be started this year.

GOVERNMENT ROAD.—W. E. Lindsey, governor of New Mexico, has communicated with the governors of Colorado, Arizona and Utah, with the object of presenting a joint appeal to Congress for the passage of a bill introduced by Representative Taylor of Colorado for a government appropriation for the construction of a railroad from Farmington, N. M., to Gallup, on the Atchison, Topeka & Santa Fe. The proposed line would be about 120 miles long, and would cost several million dollars to build.

GREAT NORTHERN.—This company has awarded a contract for an engine terminal to cost \$300,000, at Bowdoin, Mont., to Grant, Smith & Co., St. Paul, Minn. A contract has also been given to A. Guthrie & Co., of St. Paul, for the construction of a small engine terminal and an additional unit of the yard at Northtown (Minneapolis), Minn. The improvements will cost approximately \$250,000.

ILLINOIS CENTRAL.—This company is planning a three-story extension to its freight house at Ft. Dodge, Ia., to cost about \$40,000. Plans are also being drawn for extensions on the second floor of the freight house at Rockford, Ill.

The Illinois Central is preparing preliminary plans for a one-story brick building 15 ft. high, 24 ft. wide and 200 ft. long, at Memphis, Tenn., to be used as an office, storeroom, carpenter shop and pipe shop. A soaking vat also will be constructed.

ILLINOIS TERMINAL RAILROAD.—This road is making preliminary surveys for a line from Edwardsville, Ill., to O'Fallon, a distance of about 16 miles. According to present plans the line will eventually be extended to East Carondelet.

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE.—This company has awarded a contract for grading on the Soo Line cut-off at Chippewa Falls, Wis., to Roberts Brothers, Chicago, Ill. The work will cost approximately \$100,000.

NEW YORK, CHICAGO & ST. LOUIS.—This company is asking for bids for the construction of two freight houses at Cleveland, Ohio. The buildings will be 78 by 433 ft. and 48 by 72 ft., and will cost approximately \$45,000 and \$15,000, respectively.

Railway Financial News

BALTIMORE & OHIO.—See Cincinnati, Hamilton & Dayton.

CAPE MAY, DELAWARE BAY & SEWELL'S POINT.—This trolley road has been taken over jointly by the Pennsylvania and the Philadelphia & Reading. The line has not been operated since last September, when a receiver was appointed. Preparations are being made to resume operation about the middle of June.

CHICAGO, MILWAUKEE, ST. PAUL & OMAHA.—This company has declared a semi-annual dividend of 2½ per cent on its common stock, as against the previous rate of 3½ per cent, thus placing the stock on a 5 per cent per annum basis, as against the 7 per cent hitherto paid. The reduction was explained on the ground of increased costs of operation and the consequent decrease in net earnings. The company has paid 7 per cent per annum regularly since 1905.

CHICAGO, ROCK ISLAND & PACIFIC.—See editorial comments elsewhere in this issue.

CINCINNATI, HAMILTON & DAYTON.—The Baltimore & Ohio, through Kuhn, Loeb & Co., of New York, has purchased the main line of this road from Cincinnati to Toledo, 201 miles, for \$3,500,000. The Wellston division sold in two parcels from Dayton to Berlin, 114 miles, to Kuhn, Loeb & Co., reorganization managers, for \$1,160,000; and from Berlin to Dean, 37 miles, to Joseph Joseph & Brothers Company for \$750,000.

An application has been filed with the Ohio State Public Utilities Commission for an order authorizing and consenting to the issue of stocks by a new company. It proposes to take over some 368 miles of the Cincinnati, Hamilton & Dayton. The capitalization will be approximately \$40,000,000, divided into \$5,000,000 in capital stock, \$16,250,000 in first and refunding mortgage bonds, and \$20,000,000 in adjustment and improvement mortgage bonds. In the reorganization it is proposed that the lines of the old company become an integral portion of the Baltimore & Ohio, which is heavily interested as holder or guarantor of securities. Incorporators named are Charles W. Galloway, vice-president and general manager of the Baltimore & Ohio Southwestern; Charles L. Thomas, freight traffic manager, and Samuel T. McLaughlin, general freight agent of the same company; George W. Squiggins, general passenger agent of the Baltimore & Ohio, and Frank D. Deverell, auditor of the Cincinnati, Hamilton & Dayton.

DELAWARE & HUDSON.—Samuel H. Halperin, a shareholder, has applied to Justice Greenbaum, of the Supreme Court, for an injunction to prevent this company from paying a dividend of 2¼ per cent on June 20. He claims that the railroad is not earning its dividend and has borrowed \$1,000,000 to meet the payment to be made on June 20. Justice Greenbaum has issued an order requiring the Delaware & Hudson to show cause next Monday why the injunction should not be granted. William H. Williams, vice-president of the road in charge of its finances, made a statement in regard to the Halperin suit as follows: "The departments of the Delaware & Hudson Company and the Hudson Coal Company, all the stock of the latter company being owned by the former, had a net income over and above all charges of \$740,508 for May, equivalent to 1.74 per cent on the entire capital stock of the Delaware & Hudson Company. The earnings are the best for May in the history of the two companies. For the five months, January to May, the net income over and above all charges aggregated \$1,769,059, equivalent to 4.16 per cent on the capital stock. Only three years in the preceding ten showed earnings equal to those of the first five months of 1917."

LEHIGH VALLEY.—See comments on the annual report for the calendar year 1916 elsewhere in this issue.

PENNSYLVANIA RAILROAD.—See Cape May, Delaware Bay & Sewell's Point.

PHILADELPHIA & READING.—See Cape May, Delaware Bay & Sewell's Point.

ANNUAL REPORT

LEHIGH VALLEY RAILROAD COMPANY, SIX MONTHS, ENDED DECEMBER 31, 1916 - SIXTY-THIRD REPORT

TO THE STOCKHOLDERS OF THE
LEHIGH VALLEY RAILROAD COMPANY.

PHILADELPHIA, February 20, 1917.

The Board of Directors herewith submit the report of the business and condition of your Company for the six months ended December 31, 1916. The fiscal year of your Company has been changed so as to end on December 31st instead of June 30th, to conform to the period for which reports are now required by the Interstate Commerce Commission and the authorities of the several states in which your lines are located. Accordingly, this report of the transactions for the six months above stated has been prepared and, for the purpose of a proper comparison, figures are shown for the corresponding period of the preceding year.

MILEAGE

The first track mileage owned or controlled and operated by the Lehigh Valley Railroad Company, the main line of which is double track, extending from Jersey City, N. J., to Buffalo and Suspension Bridge, N. Y., is as follows:—

	MILES
Lehigh Valley Railroad Company.....	315.79
Controlled by ownership of entire capital stock.....	938.54
Controlled by ownership of majority of capital stock and lease.....	115.37
Operated under lease	27.63

Total mileage operated (owned or controlled).....	1,397.33
Trackage rights over railroads owned by other companies.....	45.82

Total first track mileage 1,443.15

In addition to the above there are 597.04 miles, or 41.37 per cent., of second track, 99.53 miles of third track, 44.86 miles of fourth track and 1,282.79 miles of yard tracks and sidings, a total of 3,467.37 miles of track in operation on December 31, 1916. A detailed statement of track mileage is shown on pages 43 to 45. The average number of miles of railway operated for the six months was 1,443.84, upon which the mileage statistics in certain tables submitted in this report are based.

The total increase of 12.55 track miles, as compared with June 30, 1916, is due almost entirely to the construction of additional yard tracks and sidings to take care of increased business.

OPERATING REVENUES AND EXPENSES

The following statement sets forth the total revenues and expenses and net revenue from operation for the six months ended December 31, 1916, compared with similar figures for the corresponding period of the preceding year. The complete income account appears on page 20.

OPERATING REVENUES			
FROM	1916	1915	INCREASE OR DECREASE
Coal freight	\$9,345,640.48	\$9,825,859.75	—\$480,219.27
Merchandise freight	11,317,769.24	10,202,598.87	1,115,170.37
Passenger	2,599,694.09	2,301,664.89	298,029.20
Mail	102,118.54	97,092.42	5,026.12
Express	420,924.78	311,055.60	109,869.18
Other transportation	1,391,404.78	1,130,209.51	261,195.27
Incidental	541,004.96	372,735.86	168,269.10
Total operating revenues.....	\$25,718,556.87	\$24,241,216.90	\$1,477,339.97
OPERATING EXPENSES			
	1916	1915	INCREASE OR DECREASE
Maintenance of way and structures	\$2,995,695.01	\$2,686,346.68	\$309,348.33
Maintenance of equipment.....	4,588,732.94	4,834,546.56	—245,813.62
Traffic expenses	519,697.06	506,885.03	12,812.03
Transportation expenses	9,780,221.39	8,275,635.67	1,504,585.72
General expenses	529,852.99	438,785.89	91,067.10
Total operating expenses.....	\$18,414,199.39	\$16,742,199.83	\$1,671,999.56
NET OPERATING REVENUE.....	\$7,304,357.48	\$7,499,017.07	—\$194,659.59
Ratio of operating expenses to operating revenues	71.60%	69.07%	2.53%

OPERATING REVENUES

COAL FREIGHT

The revenue derived from the transportation of coal and coke amounted to \$9,345,640.48, a decrease of \$480,219.27, or 4.89 per cent. This decrease is due to the reduced revenue received from transportation of anthracite coal because of the lower rates ordered by the Interstate Commerce Commission effective April 1, 1916, and a decreased tonnage largely as a result of the labor situation in the anthracite and bituminous coal regions.

The percentage of coal freight revenue to total operating revenues was 36.34 per cent., a decrease of 4.20 per cent.

The coal and coke transported, excluding the Company's supply coal, was 8,692,076 tons, a decrease of 121,371 tons, or 1.38 per cent.

This class of tonnage was 49.18 per cent. of the total tonnage hauled during the six months, a decrease of 2.35 per cent.

MERCHANDISE FREIGHT

The transportation of merchandise freight produced a revenue of \$11,317,769.24, an increase of \$1,115,170.37, or 10.93 per cent.

The revenue derived from the transportation of merchandise freight was 44.01 per cent. of the total operating revenues, an increase of 1.92 per cent.

The tonnage moved, excluding Company's material, was 8,982,065 tons, an increase of 8.34 per cent.

GENERAL FREIGHT

The total revenue derived from both coal and merchandise freight was \$20,663,409.72, an increase of \$634,951.10, or 3.17 per cent.

The entire freight traffic amounted to 17,674,141 tons, an increase of 570,213 tons, or 3.33 per cent.

The number of tons carried ore mile was 3,186,658.847, an increase of 134,033.24 ton miles, or 4.39 per cent.

The average haul was 180.30 miles, an increase of 1.83 miles, or 1.03 per cent.

The average revenue per ton was 116.913 cents, a decrease of .186 cent, or .16 per cent.

Company's freight, not included in the above, amounted to 1,494,446 tons, a decrease of 382,899 tons, or 20.40 per cent.

The total freight train mileage was 4,660,375 miles, a decrease of 13,789 miles, or .30 per cent.

The revenue received per freight train mile was \$4.43, an increase of \$0.15, or 3.50 per cent.

The average trainload of revenue freight was 683.78 tons, an increase of 30.71 tons, or 4.70 per cent. Including Company's freight, the average trainload was 708.05 tons, an increase of 30.01 tons, or 4.43 per cent.

PASSENGER

The earnings received from passenger traffic amounted to \$2,599,694.09, an increase of \$298,029.20, or 12.95 per cent.

The total number of passengers carried was 3,724,606, an increase of 369,246, or 11.00 per cent.

The number of passengers carried one mile increased 14,757,676, or 11.73 per cent.

The average distance traveled by each passenger was 37.73 miles, an increase of .24 mile, or .64 per cent.

The average revenue per passenger was 69.798 cents, an increase of 1.201 cents, or 1.75 per cent.

The average revenue per passenger per mile was 1.850 cents, an increase of .020 cent, or 1.09 per cent.

Passenger train mileage was 2,378,782, an increase of 225,901 miles, or 10.49 per cent., as compared with an increase in this revenue of 12.95 per cent.

The average revenue from passengers per passenger train mile was 109.29 cents, an increase of 2.38 cents, or 2.23 per cent.

MAIL

The sum of \$102,118.54 was received from the Federal Government for the transportation of United States mail, an increase of \$5,026.12.

EXPRESS

The revenue from this class of business amounted to \$420,924.78, an increase of \$109,869.18.

OTHER TRANSPORTATION

The earnings derived from transportation other than shown under the preceding headings were \$1,391,404.78, an increase of \$261,195.27.

INCIDENTAL

Incidental revenue amounted to \$541,004.96, an increase of \$168,269.10.

OPERATING EXPENSES.

MAINTENANCE OF WAY AND STRUCTURES

The sum of \$2,995,695.01 was expended for the maintenance of way and structures, an increase of \$309,348.33, or 11.52 per cent.

During the six months twenty-seven steel bridges and fifteen concrete-steel bridges, replacing light iron or wooden bridges, were constructed. One new steel bridge and two wooden trestles were built in connection with track extensions. Five stone arches and one wooden overhead highway bridge were extended for additional track. One wooden bridge was replaced by a pipe culvert and one stone arch replaced by a reinforced concrete culvert. One iron and two wooden bridges and two wooden trestles were abandoned and openings filled.

413 tons of 136-pound rail, 121 tons of 110-pound rail and 2,692 tons of 100-pound rail, together with necessary frogs, switches, etc., were placed in the track.

456,705 tie plates and 16,448 anti-rail creepers were used. 467,534 cross ties, 864,966 feet B. M. switch ties, 431,555 feet B. M. bridge ties and lumber amounting to 2,197,325 feet B. M. were used.

268,479 of the cross ties, 769,907 feet B. M. of switch ties and 430,324 feet B. M. of bridge ties were treated with creosote.

59,355 cubic yards of crushed stone were used in ballasting track. 7,329 feet of drain tile were placed in the roadbed.

50.07 miles of copper and 31.75 miles of iron wire were used in extending and renewing the telephone, telegraph and signal wires on the system.

MAINTENANCE OF EQUIPMENT

The expenditures for the maintenance of equipment amounted to \$4,588,732.94, a decrease of \$245,813.62, or 5.08 per cent. Included therein is a charge of \$749,798.40 for the depreciation of equipment, as required by the accounting rules of the Interstate Commerce Commission.

Thirty worn-out locomotives, one passenger car, one milk car, 1,670 freight equipment cars and 53 road service cars were condemned and either sold or destroyed during the six months and their value written off the books by appropriate charges through operating expenses.

Five passenger cars were converted into workmen's cars and 71 produce cars were converted into ice cars. Four locomotive tenders were converted into water cars and together with nine freight equipment cars were transferred to road service.

In addition to the above, eight locomotives were equipped with brick arches, three with stokers and one with straight air.

Twenty-four locomotives had new fire boxes applied, twenty-nine locomotives were equipped with new cylinders and fifteen locomotives had new boilers applied.

140 passenger equipment cars were painted and varnished and five equipped with electric lighting apparatus. Three express cars and one business car were equipped with steel underframes.

Steel underframes were applied to 50 wooden freight and coal cars, making a total of 14,243 cars so equipped. 624 wooden freight cars were equipped with metal draft arms. 746 freight equipment cars and 53 road service cars were equipped with safety appliances to conform to the requirements of the Interstate Commerce Commission.

The total number of locomotives on hand at the close of the year was 965, with a tractive power of 33,059,618 pounds. The total number of freight equipment cars was 43,504, with a capacity of 1,651,240 tons.

TRAFFIC EXPENSES

The expenditures under this heading amounted to \$519,697.06, an increase of \$12,812.03.

TRANSPORTATION EXPENSES

The cost of conducting transportation was \$9,780,221.39, an increase of \$1,504,585.72, or 18.18 per cent.

The ratio of transportation expenses to total operating revenues was 38.03 per cent., an increase of 3.89 per cent.

GENERAL EXPENSES

This class of expenses amounted to \$529,852.99, or 2.06 per cent., of the total operating revenues.

TAXES

The taxes accrued on your property, capital and business during the six months amounted to \$992,983.10, an increase of \$94,983.10.

ADDITIONS AND BETTERMENTS

The sum of \$5,705,080.69 was expended during the six months for the improvement and development of existing property and for the acquisition of new property, which amount has been charged to the appropriate Capital Accounts, as required by the Interstate Commerce Commission. A classified statement of these expenditures appears on page 40. Specific mention is made of the more important expenditures, viz:—

The new equipment purchased and added to the property during the six months is as follows: Twenty-three freight locomotives, one passenger locomotive, eight locomotive tenders, two steel dining cars, one steel business car, five steel flat cars, twenty-five steel underframe 8-wheel cabooses, 1,317 automobile cars, 80,000-pound capacity, equipped with steel underframes and steel ends, three locomotive cranes, one Russell snow plow and one motor inspection car. A portion of this equipment is covered by Equipment Trust Series O, referred to in the previous annual report.

In addition to the foregoing, orders have been placed for twenty-two Pacific type passenger locomotives, seventy-five freight locomotives, twenty locomotive tenders, 8,000 gallon capacity, twenty-five steel baggage and express cars, 183 automobile cars, 80,000-pound capacity, with steel underframes and steel ends, one motor inspection car and five locomotive cranes.

During the six months five 10-wheel freight locomotives were rebuilt and equipped with superheaters, new cylinders and Walschaert valve gears, thereby increasing their efficiency and reducing the fuel consumption.

The new passenger station and train sheds at Buffalo, referred to in the previous annual report, were placed in service last fall, although the train sheds are not entirely completed.

The new ore pier at Constable Hook was completed and the installation of machinery is well under way and the pier will be ready for operation in May next. A two-story pier and a bulkhead shed were completed and put in service at Pier 44, East River, New York.

A new engine terminal at Manchester, consisting of a 30-stall fireproof enginehouse with a 100-foot electrically operated turntable, was put in service during the winter. A machine shop and a power plant at the same point are under construction. At Suspension Bridge a new 15-stall fireproof enginehouse with a 100-foot electrically operated turntable was completed and necessary shop and power buildings are well under way. The making of minor repairs to locomotives and the prompt handling of the same will be greatly facilitated by these improvements.

The work of strengthening forty-two bridges between Coxtown and Manchester was practically completed and the heavier locomotives can now be operated over this portion of the line. The extension of sixteen passing sidings on the Seneca Division necessary to permit of the hauling of longer trains has been completed. In this connection, the work of strengthening bridges for the operation of heavier power between Manchester and Buffalo and on the Niagara Falls Branch and Ithaca Branch has been authorized and is expected to be completed about September next.

75,662 feet, or 14.33 miles, of Company's sidings, and 19,642 feet, or 3.72 miles, of industrial sidings, were constructed during the six months.

Team delivery tracks were constructed at North Wilkes-Barre, Blakeslee and Maltby, providing additional room for fourteen, six and four cars, respectively. Wagon scales were installed at East 149th Street, New York.

Thirty-seven new gasoline motor cars for use of section, bridge, signal and telegraph gangs were purchased, making a total of 185 now in service.

Automatic disc signals between Wilkes-Barre and Port Bowkley, a distance of 5.19 miles, were replaced by automatic signals of the two-position, lower quadrant type. This completes the replacement of all disc signals with semaphore signals. Automatic signals of the three-position, upper-quadrant type, equipped with electric lights, were installed between Lodi and East Waverly, a distance of 49.98 miles, replacing signals of the two-position, lower-quadrant type. An electric interlocking plant, operating derails, crossing gates and signals protecting the street crossings at Scott Street and Mississippi Street, Buffalo, was placed in service.

Visible and audible crossing signals were installed at Sheldrake Springs, Hector and Dupont Crossing.

New telegraph and telephone lines were erected for a distance of .25 mile on the New Jersey and Lehigh Division and .25 mile on the Buffalo Division. Telegraph and telephone pole lines were rebuilt for a distance of 5 miles on the New Jersey and Lehigh Division; 9.10 miles on the Mahanoy and Hazleton Division; 2.30 miles on the Wyoming Division; 1.20 miles on the Seneca Division; 5 miles on the Auburn Division, and .50 mile on the Buffalo Division. Poles were reset for a distance of 19.30 miles on the Wyoming Division; 10 miles on the Seneca Division; 6.80 miles on the Auburn Division, and 4 miles on the Buffalo Division.

FINANCIAL

No capital obligations have been issued and sold by your Company during the six months under review.

The following obligations of your Company matured and were retired:—

DESCRIPTION	INTEREST RATE	MATURITY	AMOUNT
Collateral Trust Bonds.....	4%	August	\$500,000
Equipment Trust, Series I, Certificates.....	4%	September	400,000
Equipment Trust, Series J, Certificates.....	4½%	September	250,000
Equipment Trust, Series K, Certificates.....	4%	September	150,000
Equipment Trust, Series L, Certificates.....	4½%	October	200,000

Total \$1,500,000

The advances made by the Lehigh Valley Railroad Company to the Lehigh Valley Harbor Terminal Railway Company in connection with the acquisition of real estate for additional terminal facilities at Jersey City, referred to in the last annual report, were reimbursed by the issuance of a note of the Harbor Terminal Company for \$586,404.42, bearing interest at rate of five per cent. per annum. This note has been placed in the treasury and, together with similar notes aggregating \$2,976,336.05 previously issued, will be taken up when the permanent financing of the new corporation has been arranged.

The capital stock of the Fair Land Realty Company, formerly owned by your Company, was surrendered for cancellation, the assets of that company distributed and the corporation dissolved. The capital stock of the Weatherly Water Company held by your Company was sold at par.

Material and Supplies on hand at the close of the year amounted to \$3,563,297.17, an increase of \$547,371.01.

Current Assets are \$10,386,746.91 in excess of Current Liabilities.

Two quarterly dividends of two and one-half per cent. each on the preferred and common capital stocks of the Company were declared and paid during the six months.

The cash and security balances of the Company for the six months have been verified by certified public accountants and a copy of their certificate as to the correctness of the same is given on page 15.

GENERAL REMARKS

The operating revenues of your Company for the six months under review show a substantial increase over the corresponding period of the preceding year, but, owing to the high rates of wages paid and the prevailing high prices of all classes of material required in railroad operation, the expenses increased to a greater degree, resulting in a slight decrease in the net operating revenue.

At the close of the year your Company had thirty-five men engaged in the preparation of data in connection with the Federal valuation of your property and the total cost to your Company of this work since July 1, 1913, amounts to \$161,733.76.

One new steel tug, three car floats and seven covered barges were received during the six months and added to the floating equipment of the Lehigh Valley Transportation Company, the entire capital stock of which is owned by your Company. In addition to the foregoing, orders have been placed for two steel steam lighters, thirteen steel 12-car floats, three steel 8-car floats, one steel 23-car float, six 90-foot wooden barges and ten grain boats. One wooden sea-going barge, fully covered by insurance, was lost at sea. One barge, three grain boats and two work boats were destroyed. One car float and one grain boat which, on account of age and small capacity, became undesirable for further service, were condemned and sold. The floating equipment used by your Company and its affiliated companies is shown in detail on page 42.

The operation of the Lehigh and New York Railroad, which property is leased and operated by your Company under an agreement made in 1895, resulted in a loss of \$78,858.17 for the six months.

Twenty-eight new industries were located on the system during the six months, of which twenty-six have direct track connections with your Company's lines.

The total payments direct to labor for the six months amounted to \$10,715,117.80, or 58.19 per cent. of the total operating expenses, the same having been distributed among an average of 25,303 employees.

The contribution made by your Company to its Employees' Relief Fund amounted to \$28,109.14. The total payments made from this fund since its establishment in 1878 up to December 31, 1916, have amounted to \$2,225,920.57. Of this the employees subscribed one-half, while your Company contributed the other portion.

Acknowledgment is made of the faithful and efficient services rendered by the employees of your Company.

E. B. THOMAS,
President.

COMPARATIVE INCOME ACCOUNT FOR THE SIX MONTHS
ENDED DECEMBER 31, 1916 AND 1915

	1916	1915	INCREASE OR DECREASE
OPERATING REVENUES:—			
Coal freight revenue.....	\$9,345,640.48	\$9,825,859.75	—\$480,219.27
Merchandise freight revenue..	11,317,769.24	10,202,598.87	1,115,170.37
Passenger revenue	2,599,694.09	2,301,664.89	298,029.20
Mail revenue	102,118.54	97,092.42	5,026.12
Express revenue	420,924.78	311,055.60	109,869.18
Other transportation revenue..	1,391,404.78	1,130,209.51	261,195.27
Incidental revenue	541,004.96	372,735.86	168,269.10
Total operating revenues.....	\$25,718,556.87	\$24,241,216.90	\$1,477,339.97
OPERATING EXPENSES:—			
Maintenance of way and structures	\$2,995,695.01	\$2,686,346.68	\$309,348.33
Maintenance of equipment...	4,588,732.94	4,834,546.56	—245,813.62
Traffic expenses	519,697.06	506,885.03	12,812.03
Transportation expenses	9,780,221.39	8,275,635.67	1,504,585.72
General expenses	529,852.99	438,785.89	91,067.10
Total operating expenses.....	\$18,414,199.39	\$16,742,199.83	\$1,671,999.56
Ratio of operating expenses to operating revenues	71.60%	69.07%	2.53%
Net operating revenue.....	\$7,304,357.48	\$7,499,017.07	—\$194,659.59
RAILWAY TAX ACCRUALS.....			
UNCOLLECTIBLE RAILWAY REVENUES	\$942,719.28	\$844,000.00	\$98,719.28
Total tax accruals, etc...	\$945,961.41	\$845,684.82	\$100,276.59
OPERATING INCOME	\$6,358,396.07	\$6,653,332.25	—\$294,936.18
OTHER INCOME:—			
Joint facility rent income.....	\$144,730.99	\$121,671.11	\$23,059.88
Dividend income	507,200.42	93,025.50	414,174.92
Income from funded securities	215,655.00	216,855.85	—1,200.85
Miscellaneous income	492,975.21	298,793.75	194,181.46
Total other income.....	\$1,360,561.62	\$730,346.21	\$630,215.41
TOTAL INCOME	\$7,718,957.69	\$7,383,678.46	\$335,279.23
DEDUCTIONS FROM INCOME:—			
Hire of equipment—Debit balance	\$229,114.57	\$324,142.88	—\$95,028.31
Interest on funded debt.....	1,917,434.25	1,706,661.72	210,772.53
Rent for leased roads.....	1,071,294.62	1,071,294.62	.....
Joint facility rents.....	104,504.96	104,355.12	149.84
Miscellaneous rents	296,079.00	264,685.93	31,393.07
Miscellaneous tax accruals...	50,263.82	54,000.00	—3,736.18
Miscellaneous deductions	47,621.93	17,225.23	30,396.70
Total deductions from income	\$3,716,313.15	\$3,542,365.50	\$173,947.65
NET INCOME	\$4,002,644.54	\$3,841,312.96	\$161,331.58

PROFIT AND LOSS ACCOUNT FOR THE SIX MONTHS ENDED DECEMBER 31, 1916

	Dr.	Cr.		Dr.	Cr.
Balance, July 1, 1916.....		\$23,961,862.93	Two and one-half per cent. on preferred stock, due Jan. 13, 1917.....	\$2,657.50	
Net income for six months ended December 31, 1916.....		4,002,644.54	Two and one-half per cent. on common stock, due Jan. 13, 1917.....	1,512,542.50	\$3,030,400.00
Miscellaneous adjustments.....	\$15,895.28		Balance, December 31, 1916.....	24,918,212.19	
Dividends:				\$27,964,507.47	\$27,964,507.47
Two and one-half per cent. on preferred stock, paid Oct. 14, 1916.....	\$2,657.50		Balance brought forward, January 1, 1917.....		\$24,918,212.19
Two and one-half per cent. on common stock, paid Oct. 14, 1916.....	1,512,542.50				

GENERAL BALANCE SHEET, DECEMBER 31, 1916

ASSETS		LIABILITIES	
INVESTMENT IN ROAD AND EQUIPMENT:—		CAPITAL STOCK:—	
Investment in road.....	\$24,923,156.20	1,210,034 shares common stock, par \$50... \$60,501,700.00	
Investment in equipment.....	58,481,181.44	2,126 shares preferred stock, par \$50... 106,300.00	
	\$83,404,337.64		\$60,608,000.00
INVESTMENT IN MISCELLANEOUS PHYSICAL PROPERTY.....		FUNDED DEBT:—	
	2,044,897.96	Mortgage bonds.....	\$89,336,000.00
INVESTMENTS IN AFFILIATED COMPANIES:—		Collateral trust bonds.....	9,500,000.00
Stocks.....	\$46,080,551.52	Equipment trust obligations.....	3,400,000.00
Bonds.....	32,745,926.00	Mortgage on real estate.....	1,669.18
Notes.....	3,776,490.47		\$102,237,669.18
Advances.....	2,318,177.74	Less securities held in treasury of the Company.....	17,956,000.00
	84,921,145.73		\$84,281,669.18
OTHER INVESTMENTS:—		CURRENT LIABILITIES:—	
Stocks.....	\$251,869.00	Traffic and car service balances payable... \$920,143.58	
Bonds.....	34,000.00	Audited accounts and wages payable.....	4,249,179.26
Miscellaneous.....	307,279.00	Miscellaneous accounts payable.....	269,020.60
	593,148.00	Interest matured unpaid.....	405,262.50
CURRENT ASSETS:—		Dividends matured unpaid.....	6,232.25
Cash.....	\$11,423,286.05	Funded debt matured unpaid.....	6,000.00
Traffic and car-service balances receivable.....	613,845.59	Unmatured dividends declared.....	1,515,200.00
Net balance receivable from agents and conductors.....	1,736,274.66	Unmatured interest accrued.....	603,712.72
Miscellaneous accounts receivable.....	1,383,592.72	Unmatured rents accrued.....	351,256.01
Material and supplies.....	3,563,297.17	Other current liabilities.....	489,122.37
Interest and dividends receivable.....	236,460.85		\$8,815,129.29
Other current assets.....	245,119.16		1,659,686.89
	19,201,876.20	DEFERRED LIABILITIES.....	
DEFERRED ASSETS.....	1,627,711.61	UNADJUSTED CREDITS:—	
UNADJUSTED DEBITS:—		Tax liability.....	\$633,815.42
Rents and insurance premiums paid in advance.....	\$92,549.82	Accrued depreciation—Equipment.....	9,858,464.28
Other unadjusted debits.....	2,576,667.80	Other unadjusted credits.....	3,687,357.51
	2,669,217.62		14,179,637.21
TOTAL ASSETS.....	\$194,462,334.76	PROFIT AND LOSS.....	24,918,212.19
		TOTAL LIABILITIES.....	\$194,462,334.76

THE LEHIGH VALLEY COAL COMPANY REPORT OF OPERATIONS

Six Months, Ended December 31, 1916

PHILADELPHIA, February 20, 1917.

The fiscal year of the Company has been changed so as to end on December 31, instead of June 30, and report of the operations conducted by it during the six months ended December 31, 1916, together with statements indicating its financial condition at the end of that period, are herewith submitted.

The total net income of the Company from all sources, after deducting charges for royalties, sinking funds, depreciation of the property and interest on the funded debt, amounted to \$322,216.65, a decrease of \$435,748.57, as compared with the same period of the preceding year. This decrease is due to the smaller amount of coal mined as a result of the scarcity of labor, the shorter working day and the higher wages provided for in the agreement with the miners which was entered into last year, and the increased prices of all classes of material required in the operation of the property.

The production of anthracite coal from the lands owned and leased by your Company, including that mined by tenants, was 4,038,924 gross tons, a decrease of 222,526 tons.

The percentage of sizes above pea produced by the mining operations of the Company was 65.20 per cent., a decrease of .50 per cent.

The number of breaker hours worked was 22,122, a decrease of 1,317 hours.

The bituminous coal mined from the Snow Shoe lands, located in Centre

County, Pennsylvania, amounted to 115,331 gross tons, a decrease of 28,309 tons.

The property of the Company was fully maintained during the period and \$77,503 was expended for additions and betterments.

Development work on the Broadwell tract is progressing favorably. Gangways are being driven, and as soon as this work has advanced sufficiently regular mining will be started. The coal will be taken to William A. Colliery for preparation, track connections for this purpose now being under construction.

The Company is gradually recovering from the serious cave-in at the old Hillman workings, mentioned in the preceding report. The water elevation is being lowered and mining resumed in each vein as fast as conditions permit.

No new capital obligations were issued during the period. By action of the sinking fund the funded debt of the Company was reduced by the purchase and cancellation of \$148,000 Delano Land Company First Mortgage Five Per Cent. Bonds.

Payments amounting to \$93,689 were made to the sinking funds of the various mortgages on the Company's property.

Current Assets are \$4,895,086 in excess of Current Liabilities.

The books and accounts of the Company have been verified by certified public accountants, and a copy of their certificate as to the correctness thereof appears on page 9.

F. M. CHASE,
Vice President and General Manager.

GENERAL BALANCE SHEET, DECEMBER 31, 1916

ASSETS		LIABILITIES	
PROPERTY AND PLANT.....	\$25,951,313.45	CAPITAL STOCK.....	\$1,965,000.00
SECURITIES OWNED.....	200,000.00	FUNDED DEBT.....	19,540,000.00
ADVANCES FOR COAL MINING RIGHTS.....	4,399,762.98	CURRENT LIABILITIES:—	
SINKING FUNDS IN HANDS OF TRUSTEES.....	2,614,389.69	Audited vouchers.....	\$834,275.54
INSURANCE FUND.....	152,584.36	Wages due and unpaid.....	538,565.54
CURRENT ASSETS:—		Due to individuals and companies.....	102,586.26
Cash.....	\$4,240,474.63	Royalties on coal mined, due lessors.....	29,992.32
Materials and supplies.....	541,217.97	Interest on funded debt, due January 1, 1917.....	295,000.00
Due from individuals and companies.....	2,138,639.26	Interest on funded debt, accrued, not due... 100,000.00	
	6,920,331.86	Interest due on funded debt, unclaimed... 4,245.00	
DEFERRED AND SUSPENDED ASSETS:—		Taxes due and accrued.....	120,581.15
Stripping in advance of mining.....	\$357,018.13		2,025,245.81
Miscellaneous.....	338,845.13	DEFERRED AND SUSPENDED LIABILITIES:—	
	695,863.26	Deferred real estate payments.....	\$500,000.00
TOTAL ASSETS.....	\$40,934,245.60	Miscellaneous.....	942,579.99
			1,442,579.99
		RESERVE ACCOUNTS:—	
		Depreciation and other reserves.....	9,756,417.93
		PROFIT AND LOSS.....	6,205,001.87
		TOTAL LIABILITIES.....	\$40,934,245.60

[Adv.]

Railway Officers

Executive, Financial, Legal and Accounting

T. H. Lantry, superintendent of the Yellowstone division of the Northern Pacific, has been appointed assistant to first vice-president, with headquarters at St. Paul, Minn., effective June 4.

Frederick M. Miner, general attorney for the Minneapolis & St. Louis, whose appointment as general counsel was announced in the *Railway Age Gazette* of June 8, was born at Clinton, Mass., on February 18, 1862. He acquired a legal education through private study. In August, 1911, he entered railway service in the legal department of the M. & St. L. In January, 1913, he was appointed general attorney, with headquarters at Minneapolis, Minn. He held this position until his promotion to general counsel, with the same headquarters, on May 8, 1917, succeeding W. H. Bremner, who was recently elected president of the Minneapolis & St. Louis, as already announced in these columns.

G. W. Feakins, general agent of the traffic department of the El Paso & Southwestern at St. Louis, Mo., has been appointed assistant to president, with headquarters at New York, succeeding P. M. Ripley, resigned.

Harry M. Adams, whose election as vice-president in charge of traffic of the Missouri Pacific Railroad, the successor of the Missouri Pacific Railway and the St. Louis, Iron Mountain & Southern Railway, was announced in the *Railway Age Gazette* of May 25, was born at Camanche, Iowa, on January 3, 1867. He entered railway service in 1880, with the St. Louis & San Francisco as a messenger at Cherryvale, Kan. He later held various positions in station service on the Kansas City, Fort Scott & Gulf and the Southern Kansas, and in 1886 was made chief clerk in the general baggage department of the Southern Kansas. On June 1, 1887, he became cashier in the local freight office of the same road at Cherryvale, Kan., and on October 15, 1887, became chief clerk in the general baggage department of the Oregon Railway & Navigation Company. From December, 1889, to June 1, 1890, he was consecutively division baggage agent and advertising agent of the Union Pacific at Portland, Ore. From the latter date until June 10, 1893, he was baggage agent of the United Storage and Baggage Transfer Company at the same city, following which he spent a year in South America. On March 1, 1894, he entered the traffic department of the Oregon Railway & Navigation Company as ticket clerk at Seattle,



Frederick M. Miner



H. M. Adams

Wash., following which he was consecutively clerk in the general traffic office at Portland, traveling freight and passenger agent, chief clerk in the general freight department and general agent. On May 15, 1902, he was promoted to assistant general freight agent, with headquarters at Portland, Ore., and on June 18, 1905, left the Oregon Railway & Navigation Company to become assistant traffic manager of the Great Northern, with headquarters at Seattle, Wash. From December 1, 1907, to June 30, 1910, he was general freight and passenger agent of the Spokane, Portland & Seattle at Portland, and from the latter date until March, 1914, freight traffic manager of the Western Pacific. On August 1, 1913, he was appointed also freight traffic manager of the Denver & Rio Grande. His appointment as general traffic manager of the Missouri Pacific and the St. Louis, Iron Mountain & Southern dates from March, 1914. In May, 1914, he resigned as freight traffic manager of the Denver & Rio Grande. As vice-president in charge of traffic of the reorganized Missouri Pacific he will continue to have headquarters at St. Louis, Mo.

J. P. Smith, general manager and controller of the Georgia, Florida & Alabama, at Pensacola, Fla., has been appointed auditor and car accountant, with headquarters at Pensacola; the position of general manager has been abolished and the duties of that position have been assumed by F. E. Dewey, operating receiver.

Matthew M. Joyce, whose appointment as general attorney for the Minneapolis & St. Louis, with headquarters at Minneapolis, Minn., was announced in the *Railway Age Gazette* of June 1, was born at Emmetsburg, Ia., on April 29, 1877. He received his legal education at the University of Michigan, from which he graduated in 1900. He entered railway service on March 1, 1911, as district attorney for the Minneapolis & St. Louis at Ft. Dodge, Ia., which position he held until promoted to general attorney, as noted above.

The following are the executive and general officers of the Colorado Midland Railroad Company, which has acquired the Colorado Midland Railway Company heretofore operated by receiver: Spencer Penrose, chairman of the board; A. E. Carlton president, C. M. McNeill vice-president, and J. J. Cogan, general manager, with headquarters at Colorado Springs, Col.; H. L. Hobbs treasurer, Hughes & Dorsey general counsel, and W. S. Wing, auditor, with headquarters at Denver; L. G. Carlton, secretary, at Colorado Springs; L. A. Rafert, general freight agent at Denver; F. C. Matthews general passenger agent, M. L. Phelps superintendent, C. A. McCarthy superintendent machinery, C. N. Davids purchasing agent, and V. B. Wagner, chief engineer, with headquarters at Colorado Springs, and G. L. Linney, car accountant at Denver.

Operating

J. L. Burns has been appointed chief dispatcher of the Grand Trunk, with office at Richmond, Que., vice E. C. Potter.

R. T. Taylor, trainmaster on the Northern Pacific at Duluth, Minn., has been appointed assistant to the general superintendent, with headquarters at Livingston, Mont.

D. M. Driscoll, roadmaster on the Northern Pacific at Duluth, Minn., has been appointed trainmaster on the Lake Superior division, with the same headquarters, effective June 5.

A. L. Haldeman, acting superintendent of the Dakota division of the Chicago, Rock Island & Pacific, has been appointed superintendent of that division, with headquarters at Estherville, Ia.

Marshall B. Smith has been appointed superintendent of the Columbus division of the Central of Georgia, with headquarters at Columbus, Ga., vice E. P. McLain, resigned on account of ill health.

F. Williams has been appointed superintendent and master mechanic of the Gulf, Florida & Alabama, with headquarters at Pensacola, Fla. He succeeds J. P. Lynahan, superintendent, and B. Dotson, master mechanic, resigned.

G. H. Bussing, superintendent of motive power and equipment of the Mexico Northwestern, has been promoted to general superintendent in charge of the transportation, maintenance of way and mechanical departments, with office at Ciudad Juarez, Chihuahua, Mexico, and the position of superintendent of motive power and equipment has been abolished.

S. U. Hooper, trainmaster of the Baltimore & Ohio, at Seymour, Ind., has been appointed superintendent of the Toledo division of the Cincinnati, Hamilton & Dayton, with office at Toledo, Ohio; H. S. Smith succeeds Mr. Hooper, and C. M. Shriver has been appointed trainmaster of the Portsmouth subdivision, with office at Portsmouth, Ohio.

J. Lowell White, assistant to general superintendent of transportation of the Atlantic Coast Line at Wilmington, N. C., has been appointed superintendent of the Norfolk district, with headquarters at Norfolk, Va., vice B. J. Hughes, deceased, and A. J. Moore has been appointed superintendent of the Wilmington district, with headquarters at Wilmington, N. C., vice V. R. C. King, resigned.

William G. Curren, who has been appointed superintendent of transportation of the Baltimore & Ohio, with headquarters at Baltimore, Md., as has already been announced in these columns,



W. G. Curren

was born on April 12, 1881, at Webb's Mills, New York. He was educated in the public schools and in December, 1901, began railway work as an agent of the Pennsylvania Railroad. One year later, he went to the Erie as a stenographer and in 1908, was made inspector of transportation of that road. Later in the same year he was appointed chief clerk to the general superintendent of the Kansas City Southern and subsequently was promoted to superintendent of car service. In March, 1912, he entered the service of the Baltimore & Ohio in the transportation department as assistant superintendent, and later served as assistant to the general superintendent of transportation. He subsequently became assistant general superintendent of transportation of the Baltimore & Ohio Southwestern and the Cincinnati, Hamilton & Dayton, at Cincinnati, Ohio, and on June 1 was appointed superintendent of transportation of the Baltimore & Ohio, with headquarters at Baltimore, as above noted.

G. H. Jacobus, assistant to general superintendent of the Northern Pacific at Livingston, Mont., has been appointed superintendent of the Yellowstone division, with headquarters at Glendive, Mont., vice T. H. Lantry, assigned to other duties. R. T. Taylor, trainmaster at Duluth, Minn., succeeds Mr. Jacobus, and J. C. Roth, terminal trainmaster at Pasco, Wash., has been appointed assistant to general superintendent of the western district, with headquarters at Tacoma.

R. V. Massey, superintendent of the New York division of the Pennsylvania Railroad, has been appointed general superintendent of the Eastern Pennsylvania division, with headquarters at Altoona, Pa., to succeed George W. Creighton, deceased. Effective June 16. M. W. Clement, division engineer in the office of the principal assistant engineer of the New Jersey division, has been promoted to superintendent of the New York, Philadelphia & Norfolk Railroad, effective June 16, succeeding C. I. Leiper, promoted.

The authority of Elisha Lee, general manager, and C. M. Sheaffer, general superintendent of transportation of the Pennsylvania Railroad Lines East of Pittsburgh, and G. Latrobe, general superintendent of the Philadelphia, Baltimore & Washington, has been extended over the New York, Philadelphia & Norfolk; M. W. Clement has been appointed superintendent of the New York, Philadelphia & Norfolk, effective June 16, to succeed C. I. Leiper, who becomes superintendent of the New York division of the Pennsylvania Railroad.

The Canadian Government Railways announce that the lines are now divided by the St. Lawrence river at Quebec into two

operating divisions, to be designated as Canadian Government Railways Eastern Lines and Canadian Government Railways Western Lines. C. A. Hayes is general manager of the Eastern Lines, with office at Moncton, N. B., and F. P. Brady, general superintendent at Winnipeg, Man., has been appointed general manager of the Western Lines, with office at Winnipeg. C. B. Brown, chief engineer at Moncton, has been appointed also assistant general manager Eastern Lines, and W. A. Cowan, assistant general superintendent at Cochrane, Ont., has been appointed general superintendent with office at the same place.

David J. Evans, whose appointment as superintendent of the Alliance division of the New York Central, with headquarters at Alliance, Ohio, has been announced in these columns, was born at Brookfield, Ohio, on August 19, 1870. He began railway work on September 12, 1889, in the office of the superintendent of the Franklin division of the Lake Shore & Michigan Southern at Youngstown, Ohio, serving in the capacity of chief clerk for several years prior to March, 1906. From the latter date to November 15, 1910, he was on the staff of the general superintendent at Cleveland, and was then appointed trainmaster of the Toledo division, with headquarters at Toledo, where he remained until December, 1912, when he was promoted to assistant superintendent of that division. He held this position until his recent appointment as division superintendent of the New York Central at Alliance. Mr. Evans' entire railway service has been with the Lake Shore & Michigan Southern and its successor, the New York Central.

E. J. Correll, who has been appointed superintendent of the Wellston and Delphos divisions of the Cincinnati, Hamilton & Dayton, with headquarters at Dayton, Ohio, as has already been



E. J. Correll

announced in these columns, was born on October 23, 1871, at Canton, Ohio, and graduated from Ohio Northern University, where he took up the study of civil engineering. He began railway work in September, 1896, as a rodman in the engineering department of the Baltimore & Ohio Southwestern at Cincinnati, Ohio. In February, 1899, he was appointed assistant division engineer at Chillicothe, remaining in that position until May, 1901, when he was transferred to Cincinnati as assistant engineer. One year later

he went to Washington, Indiana, as assistant division engineer, and on April 1, 1903, he was appointed division engineer, with headquarters at Chillicothe, Ohio, remaining in that position until January, 1908. He then served until August, 1911, as engineer maintenance of way on the Missouri Pacific at Little Rock, Ark. In April, 1914, he returned to the service of the Baltimore & Ohio as division engineer at Chillicothe, and on September 1, 1916, he was promoted to district engineer maintenance of way of the Southwest district, with headquarters at Cincinnati, which position he held until his appointment as superintendent of the Wellston and Delphos divisions of the Cincinnati, Hamilton & Dayton, as above noted.

Traffic

John A. Leary has been appointed division freight agent of the Chicago, Burlington & Quincy, with headquarters at Casper, Wyo.

H. J. Perkins has been appointed industrial agent of the Union Depot Bridge & Terminal Company, Kansas City, Mo., succeeding E. P. Hamlin, resigned to engage in other business.

R. M. Hatfield has been appointed general agent of the traffic department of the Chicago Great Western, with office at Mason City, Ia., vice R. L. DeGroot, transferred.

B. F. Parsons, formerly chief clerk in the Chicago office of the Chicago Great Western, has been appointed assistant general freight agent, succeeding F. S. Hollands, resigned. Effective June 1.

Sherman H. Gillette, chief clerk in the general freight department of the Chicago & North Western, has been appointed assistant general freight agent, succeeding Edward J. Seymour, retired on pension.

C. W. Thacker has been appointed acting general freight and passenger agent of the Gulf, Florida & Alabama, with office at Pensacola, Fla., vice G. C. Willings, general traffic manager, resigned, and the position of general traffic manager has been abolished.

D. A. Story, general freight agent of the Canadian Government Railways, at Moncton, N. B., has been appointed freight traffic manager, and H. H. Melanson, general passenger agent at Moncton, has been appointed passenger traffic manager, both with offices at Moncton; they will report to the general manager of the Eastern Lines.

C. C. P. Rausch, whose appointment as assistant freight traffic manager of the Missouri Pacific was announced in these columns on June 8, was born at St. Louis, Mo., on September 24, 1872. On July 1, 1888, he entered railway service as an office boy in the employ of the Missouri Pacific-St. Louis, Iron Mountain & Southern. He was later successively clerk, rate clerk, chief tariff clerk and chief clerk until March 1, 1906, when he became assistant general freight agent, with headquarters at St. Louis. In May, 1915, he was appointed general freight agent, from which position he was promoted on June 1 to assistant freight traffic manager, with the same headquarters.

Bert Hayden, division freight agent of the Lehigh Valley at Sayre, Pa., after 47 years of service with that road, has asked to be relieved of part of his duties, and has been appointed special agent of the traffic department at Sayre, and will perform such duties as may be assigned to him. The office of division freight agent at Sayre has been discontinued, and the territory heretofore covered by Mr. Hayden, with some small exceptions, has been assigned to D. J. Sims, division freight agent at Auburn, N. Y. M. P. Howell, general agent at Rochester, has had his jurisdiction extended to cover adjacent territory, and R. G. McDowell, division freight agent at Wilkes-Barre, has had his territory extended to cover main line points as far as, but not including, Towanda.

Edward J. Seymour, assistant general freight agent of the Chicago & North Western, has retired on a pension after 40 years of service. He entered railway service in 1872 as a clerk in the office of the general western agent of the Grand Trunk, at Toronto, Can. He was later clerk in the freight office at Ft. Gratiot, Mich., and clerk to the assistant general freight agent at Detroit. On October 1, 1874, he entered the service of the Grand Rapids & Indiana as a clerk in the general freight office at Grand Rapids, Mich. From December 1, 1875, to December, 1876, he was general freight agent and general superintendent of the Ohio & Mississippi. From March 7, 1877, to October 1, 1893, he served as chief clerk and assistant general freight agent of the Milwaukee, Lake Shore & Western. On October 1, 1893, he was appointed assistant general freight agent of the Chicago & North Western, which position he held until his retirement on June 1, 1917.

John Kemp Goodloe Ridgely, who has been appointed general passenger agent of the Louisville & Nashville lines south of Birmingham, Ala., with headquarters at New Orleans, La., as has already been announced in these columns, was born on December 3, 1870, at Ridgely, Md., and was educated in the private schools of Kentucky, also at Kentucky Military Institute. In October, 1892, he began railway work as traveling passenger agent of the Louisville & Nashville at Indianapolis, Ind., and subsequently served consecutively as city passenger agent at Birmingham, and as district passenger agent at Memphis, Tenn.; from 1896 to 1901 he was division passenger agent at Chicago, and then to 1912 was division passenger agent at New Orleans, La. He was appointed assistant general passenger agent at New Orleans in 1912, which position he held at the time of his recent appointment as general passenger agent of the lines south of Birmingham of the same road, as above noted.

Engineering and Rolling Stock

Lewis H. Bond, roadmaster on the Illinois Central at Carbon-dale, Ill., has been appointed assistant engineer maintenance of way, with headquarters at Chicago, succeeding W. G. Arn, who has accepted a commission in the Chicago railway regiment, the Third Reserve Engineers.

Carl Scholz, manager of the mining and fuel department of the Chicago, Rock Island & Pacific at Chicago, has been appointed mining engineer of the Chicago, Burlington & Quincy, with the same headquarters, effective June 1. Mr. Scholz was born at Slawentzitz, Germany, on July 2, 1872. He was educated in mining engineering at the Royal Gymnasium at Beuthen, Germany, and came to the United States in 1889. From 1891 to 1895, he was mining engineer for the Mount Carbon Company, Powellton, Va. From the latter date until 1901, he was part owner and manager of the Thomas Scholz Company, the Superior Coal & Lumber Company, and the Railway Extension Company, of Mammoth, W. Va., the Riverside Coal Company, of Riverside, W. Va., and the Carbon & Coke Company, Carbon, W. Va. In August, 1902, he became connected with the mining department of the Chicago, Rock Island & Pacific, and later was manager of the mining and fuel department, at the same time being president of the Rock Island Coal Mining Company and the Coal Valley Mining Company and director of the Improved Combustion Company and of the Crawford County Mining Company. He has been president of the American Mining Congress for three terms, and in 1910 was sent to Europe by the United States Bureau of Mines to investigate and report on mining conditions. As mining engineer of the Burlington he will have charge of the development of the southern Illinois coal properties of that road.



Carl Scholz

Railway Officers in Military Service

Morton Russell, assistant engineer on field construction, of the Southern Pacific, Pacific system, was called into service on May 21, as captain in the Eighth Reserve Engineers.

J. A. McGrew, superintendent of the Saratoga and Champlain divisions of the Delaware & Hudson, is in military service as major in the Quartermaster Officers' Reserve Corps.

M. J. Powers, general passenger agent of the Delaware & Hudson, left railway service on May 1 to go into military service as a captain in the Quartermaster Officers' Reserve Corps.

Leroy Overpeck, general yardmaster of the Atchison, Topeka & Santa Fe at Emporia, Kan., has been recommended for a commission as captain in the Third Reserve Engineers. L. F. Von Blucher, roundhouse foreman of the Gulf, Colorado & Santa Fe at Galveston, Tex., has been recommended for first lieutenant in the same regiment.

OBITUARY

F. B. Willard, division superintendent of the Chicago, Milwaukee & St. Paul, at Missoula, Mont., was found dead in bed at his home in Missoula on the morning of June 3.

W. O. Johnson, formerly general counsel for the Erie, died at his home in Chicago on June 10. Mr. Johnson was born at Fredonia, N. Y., on August 30, 1856. He received his legal education at Hamilton College, and practiced law at Buffalo until 1882, when he came to Chicago as general counsel for the Erie. In 1906 he was elected president of the Security Life Insurance Company, and in 1911 he was named receiver of the Chicago & Milwaukee Electric Railroad.